

# Miller Supply Company

**LOOK TO MILLER**

**FOR**

**PIPE VALVES FITTINGS  
TOOLS SPECIALTIES  
HEATING MATERIALS**

**CATALOGUE  
A**

*Sawyer Ave. at 21<sup>st</sup> Street*  
**CHICAGO**

# **It Will Save You Time and Money To Fill Your Needs from Our House**

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It is more economical for you to draw from our stock than to maintain a complete stock of supplies for yourselves. Through quantity buying we can give you the best prices.

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It will save you in labor, time, and money to secure all of your industrial supplies from one reliable source. We have the products of hundreds of manufacturers under one roof.

## **3. New Goods**

We are constantly sifting the best products from the new goods introduced into the field, thus making new and improved equipment available for you.

## **4. Goods Selected to Meet Your Needs**

We bring to your service an intimate knowledge of local conditions, which manufacturers could not be expected to have. We study your requirements, and select stock to meet them.

## **5. Service by the Clock**

Our service to you is measured by the clock—not by the calendar. We can serve you with a promptness which distant manufacturers can not equal. And shut-downs are expensive.

## **6. A Double Guarantee of Quality**

Our stock offers you the “pick of the field,” and carries a double assurance of quality, our own, as well as that of the manufacturers.

## **7. Personal, Friendly Service**

We bring you a close personal service which you could not expect from distant sources of supply. You have the advantage of doing business with friends whose success in turn depends upon your satisfaction.

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Every industry at times has need of emergency service. We endeavor to fill such needs. To insure emergency service when needed, give your every-day support and patronage to your supply house.

**MAKE OUR WAREHOUSE YOUR STOCKROOM  
TELEPHONE YOUR ORDERS**





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# SYLLABUS

For the course of instruction in the  
Department of Mathematics  
for the year 1900-1901

By  
J. H. COLEMAN, Professor of Mathematics

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CATALOGUE A

1930

**LOOK TO MILLER**

For

**Pipe, Valves, Fittings,  
Supplies and Equipment for  
Factory, Mill and Industrial Trades**

**Miller Supply Company**

*Sawyer Ave. at 21<sup>st</sup> St.*

**Chicago**

**Telephone CRA wford 3400**



General Offices and Warehouse: Sawyer Ave. at 21st St.





Loading Platform Showing Our Excellent Shipping Facilities



A Section of Our Pipe Cutting Department



# Introduction and General Information

In compiling our catalogue, we have endeavored to make it a complete and up-to-date reference book of equipment and supplies, illustrating and describing with full specifications, materials for which there is a daily demand.

## List Prices

The list prices in this catalogue agree with latest correct list prices at time of issue.

They are not offered as a quotation, and are subject to market changes without notice.

You will find our prices as low as is consistent with furnishing respective qualities.

## Terms

To concerns of approved credit, two per cent 10th proximo; 30 days net. Unless your standing is known to us or you have a rating with the commercial agencies, we suggest that you accompany your first order with trade references so as to avoid delay in looking up your credit.

## Routing Shipments

Customers should send specific shipping instructions with all orders. In the absence of said information, we will use our own judgment for guidance.

## Loss and Damage in Transit

We do not hold ourselves responsible for loss or damage sustained in transit, and claims of such character should be made promptly against freight or express companies. If we are notified of such claims, we will gladly lend our assistance to secure adjustment. We employ experienced packers and cannot be held responsible for breakage occurring after we have obtained "good order" receipt from transportation companies.

## Shortages

All goods are double checked, to prevent errors and shortages. Claims for shortages should be made promptly.

## Returned Goods

When orders have been correctly filled, goods are not returnable without our consent having first been obtained.



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## Reading Genuine Puddled Wrought Iron Pipe

### Standard Weight Pipe—Black and Galvanized



Reading Genuine Puddled Wrought Iron Pipe is made by the time-tested puddling process. Fiery, hot pure pig iron and silicious slag—a substance as rust-free as plate glass—are worked and kneaded together inside the flame-filled puddling furnace until the slag is thoroughly and uniformly distributed throughout the structure of the metal.

This pipe is called Reading 5-Point Pipe because it inherently possesses the five major qualities that mean long endurance—great resistance to corrosion, ability to stand strain and metal “fatigue,” better threading, sound welding and the ability to hold coatings permanently.

Size In.	Per Foot	Butt Weld		Thick-Threads		Plain Ends		Threads and Couplings	
		DIAMETER, INCHES External	Internal	ness In.	per Inch	Ends			
1/8	\$.05 1/2	.405	.266	.070	27	.244		.245	
1/4	.06	.540	.360	.090	18	.424		.425	
3/8	.06	.675	.489	.093	18	.567		.568	
1/2	.08 1/2	.840	.617	.111	14	.850		.852	
3/4	.11 1/2	1.050	.819	.115	14	1.130	1.134		
1	.17	1.315	1.043	.136	11 1/2	1.678	1.684		
1 1/4	.23	1.660	1.374	.143	11 1/2	2.272	2.281		
1 1/2	.27 1/2	1.900	1.604	.148	11 1/2	2.717	2.731		
2	.37	2.375	2.060	.158	11 1/2	3.652	3.678		
<b>Lap Weld</b>									
1 1/4	\$.23	1.660	1.374	.143	11 1/2	2.272	2.281		
1 1/2	.27 1/2	1.900	1.604	.148	11 1/2	2.717	2.731		
2	.37	2.375	2.060	.158	11 1/2	3.652	3.678		
2 1/2	.58 1/2	2.875	2.460	.208	8	5.793	5.819		
3	.76 1/2	3.500	3.059	.221	8	7.575	7.616		
3 1/2	.92	4.000	3.538	.231	8	9.109	9.202		
4	1.09	4.500	4.016	.242	8	10.790	10.889		
4 1/2	1.27	5.000	4.496	.252	8	12.538	12.642		
5	1.48	5.563	5.036	.263	8	14.617	14.810		
6	1.92	6.625	6.053	.286	8	18.974	19.185		
7	2.38	7.625	7.010	.307	8	23.544	23.769		
8	2.50	8.625	8.059	.283	8	24.696	25.000		
8	2.88	8.625	7.967	.329	8	28.554	28.809		
9	3.45	9.625	8.927	.349	8	33.907	34.188		
10	3.20	10.750	10.181	.284	8	31.201	32.000		
10	3.50	10.750	10.124	.313	8	34.240	35.000		
10	4.12	10.750	10.005	.372	8	40.483	41.132		
11	4.63	11.750	10.985	.382	8	45.557	46.247		
12	4.50	12.750	12.077	.336	8	43.773	45.000		
12	5.07	12.750	11.985	.382	8	49.562	50.706		
140.D.		14.000	13.250	.375	8	53.510	55.712		
150.D.		15.000	14.250	.375	8	57.437	59.859		
160.D.		16.000	15.250	.375	8	61.364	63.927		
170.D.		17.000	16.250	.375	8	65.292	69.436		
180.D.		18.000	17.250	.375	8	69.219	73.681		
200.D.		20.000	19.250	.375	8	77.073	82.078		
220.D.		22.000	21.250	.375	..	86.609	.....		
220.D.		22.000	21.000	.500	..	114.811	.....		
240.D.		24.000	23.250	.375	..	94.619	.....		
240.D.		24.000	23.000	.500	..	125.491	.....		

Furnished with threads and couplings and in random lengths unless otherwise ordered.

Weight per foot of pipe with threads and couplings is based on a length of 20 feet, including coupling, but shipping lengths of small sizes will usually average less than 20 feet.

Permissible variation in weight is 2 1/2 per cent below and 5 per cent above weights given in tables.

All weights are figured on the basis of 1 cubic inch of wrought iron weighing .2778 pounds.

All pipe threaded to Briggs' standard gauges as made by Pratt & Whitney Co., Hartford, Conn.

For cut lengths an extra charge will be made above random lengths. For pipe smoothed on the inside known as plugged and reamed, an extra charge will be made above standard pipe. For galvanized or coated pipe an extra charge will be made above black.

When ordering sizes 8-inch to 12-inch please state weight of pipe wanted.

## Reading Genuine Puddled Wrought Iron Pipe

### Extra Strong and Double Extra Strong Black and Galvanized



Reading Genuine Puddled Wrought Iron Pipe is made by the time-tested puddling process. Fiery, hot pure pig iron and silicious slag—a substance as rust-free as plate glass—are worked and kneaded together inside the flame-filled puddling furnace until the slag is thoroughly and uniformly distributed throughout the structure of the metal.

This pipe is called Reading 5-Point Pipe because it inherently possesses the five major qualities that mean long endurance—great resistance to corrosion, ability to stand strain and metal “fatigue,” better threading, sound welding and the ability to hold coatings, such as galvanizing, permanently.

Size Inches	Per Foot	Extra Strong Butt Weld		Thick-ness inches	Hydro-static Test	Plain Ends Wt., Lbs. per Foot
		DIAMETER, INCHES External	Internal			
1/8	\$.12	.405	.210	.098	750	.314
1/4	.07 1/2	.540	.295	.122	750	.535
3/8	.07 1/2	.675	.417	.129	750	.738
1/2	.11	.840	.539	.151	750	1.087
3/4	.15	1.050	.735	.157	750	1.473
1	.22	1.315	.949	.183	750	2.171
1 1/4	.30	1.660	1.269	.195	1500	2.996
1 1/2	.36 1/2	1.900	1.491	.204	1500	3.631
2	.50 1/2	2.375	1.929	.223	2500	5.022
<b>Lap Weld</b>						
1 1/4	\$.30	1.660	1.269	.195	2500	2.996
1 1/2	.36 1/2	1.900	1.491	.204	2500	3.631
2	.50 1/2	2.375	1.929	.223	2500	5.022
2 1/2	.77	2.875	2.311	.282	2000	7.661
3	1.03	3.500	2.887	.306	2000	10.252
3 1/2	1.25	4.000	3.350	.325	2000	12.505
4	1.50	4.500	3.811	.344	2000	14.983
4 1/2	1.80	5.000	4.275	.363	1800	17.611
5	2.08	5.563	4.797	.383	1800	20.778
6	2.86	6.625	5.743	.441	1800	28.573
7	3.81	7.625	6.603	.511	1500	38.048
8	4.34	8.625	7.604	.510	1500	43.388
9	4.90	9.625	8.604	.510	1500	48.728
10	5.48	10.750	9.729	.510	1200	54.735
11	6.10	11.750	10.729	.510	1100	60.075
12	6.55	12.750	11.729	.510	1100	65.415
<b>Double Extra Strong</b>						
<b>Butt Weld</b>						
1/2	\$.32	.840	.226	.307	750	1.714
3/4	.35	1.050	.413	.318	750	2.440
1	.37	1.315	.576	.369	750	3.659
1 1/4	.52 1/2	1.660	.874	.393	2200	5.214
1 1/2	.65	1.900	1.078	.411	2200	6.408
<b>Lap Weld</b>						
2	\$.91	2.375	1.480	.447	3000	9.029
2 1/2	1.37	2.875	1.742	.567	3000	13.695
3	1.86	3.500	2.270	.615	3000	18.583
3 1/2	2.30	4.000	2.697	.651	2500	22.850
4	2.76	4.500	3.119	.690	2500	27.541
4 1/2	3.26	5.000	3.546	.727	2000	32.530
5	3.86	5.563	4.028	.768	2000	38.552
6	5.32	6.625	4.857	.884	2000	53.160
8	7.25	8.625	6.835	.895	2000	72.424

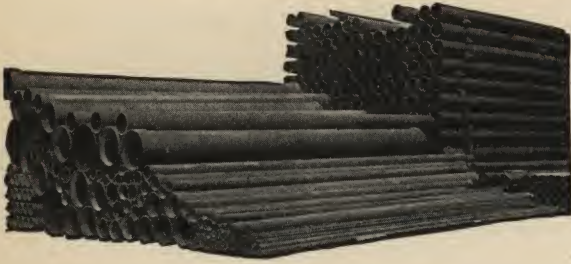
Extra strong and double extra strong pipe will be shipped in random lengths and with plain ends unless otherwise ordered. Random lengths are considered to be 12 to 20 feet—5 per cent may be 6 to 12 feet.

If fitted with threads and couplings, an extra charge will be made above regular. When extra strong and double extra strong is ordered with threads and couplings, the regular line couplings will be furnished, unless otherwise specified. For cut lengths, an extra charge will be made above random lengths. For galvanized or tar coated pipe, an extra charge will be made above black.

There is 5 per cent permissible variation in weight from above extra strong sizes—10 per cent on double extra strong.



**Steel Pipe**  
For Steam, Gas and Water  
Standard  
Black and Galvanized  
Revised January 1, 1923



The permissible variation in weight is 5 per cent above and 5 per cent below.

Furnished with threads and couplings and in random lengths unless otherwise ordered.

Taper of threads is  $\frac{3}{4}$ -inch diameter per foot length for all sizes.

The weight per foot of pipe with threads and couplings is based on a length of 20 feet, including the coupling, but shipping lengths of small sizes will usually average less than 20 feet.

On sizes made in more than one weight, weight desired must be specified.

For pipe smoothed on the inside, known as reamed and drifted, an extra charge will be made above standard pipe.

For galvanized, or coated pipe, an extra charge will be made above black.

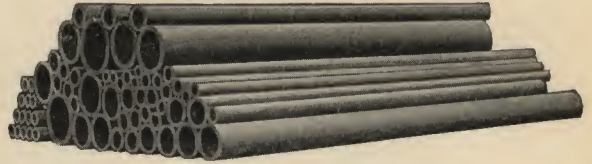
On orders calling for commercial sizes of pipe which are finished with threads and couplings, in sizes  $\frac{1}{8}$  to 12-inch, inclusive, and where orders specify quantity in linear feet, it is understood that random lengths fitted with threads both ends and coupling one end will be supplied and the measurement is charged from end to end, that is over all, including coupling.

If cut lengths of any sizes are ordered, instructions must appear on the face of the order whether plain ends, threads only or threads and couplings are required. The pipe proper is cut to the length specified for plain ends or threads only, and if cut lengths with threads and couplings are specified, the practice is the same with the exception that the couplings are charged separately whether they are shipped loose or screwed on the pipe. Copper bearing steel pipe can also be furnished in the same weights and dimensions.

**All Weights and Dimensions are Nominal**

Size Inches	DIAM., INCHES		Thick- ness Inches	Wt. Lbs. per Ft. No of Threads Threads			Price per Foot
	External	Internal		Plain End	and Coupled	per Inch	
$\frac{1}{8}$	.405	.269	.068	.244	.245	27	\$.05 $\frac{1}{2}$
$\frac{1}{4}$	.540	.364	.088	.424	.425	18	.06
$\frac{3}{8}$	.675	.493	.091	.567	.568	18	.06
$\frac{1}{2}$	.840	.622	.109	.850	.852	14	.08 $\frac{1}{2}$
$\frac{3}{4}$	1.050	.824	.113	1.130	1.134	14	.11 $\frac{1}{2}$
1	1.315	1.049	.133	1.678	1.684	11 $\frac{1}{2}$	.17
1 $\frac{1}{4}$	1.660	1.380	.140	2.272	2.281	11 $\frac{1}{2}$	.23
1 $\frac{1}{2}$	1.900	1.610	.145	2.717	2.731	11 $\frac{1}{2}$	.27 $\frac{1}{2}$
2	2.375	2.067	.154	3.652	3.678	11 $\frac{1}{2}$	.37
2 $\frac{1}{2}$	2.875	2.469	.203	5.793	5.819	8	.58 $\frac{1}{2}$
3	3.500	3.068	.216	7.575	7.616	8	.76 $\frac{1}{2}$
3 $\frac{1}{2}$	4.	3.548	.226	9.109	9.202	8	.92
4	4.500	4.026	.237	10.790	10.889	8	1.09
4 $\frac{1}{2}$	5.	4.506	.247	12.538	12.642	8	1.27
5	5.563	5.047	.258	14.617	14.810	8	1.48
6	6.625	6.065	.280	18.974	19.185	8	1.92
7	7.625	7.023	.301	23.544	23.769	8	2.38
8	8.625	8.071	.277	24.696	25.	8	2.50
8	8.625	7.981	.322	28.554	28.809	8	2.88
9	9.625	8.941	.342	33.907	34.188	8	3.45
10	10.750	10.192	.279	31.201	32.	8	3.20
10	10.750	10.136	.307	34.240	35.	8	3.50
10	10.750	10.020	.365	40.483	41.132	8	4.12
11	11.750	11.	.375	45.557	46.247	8	4.63
12	12.750	12.090	.330	43.773	45.	8	4.50
12	12.750	12.	.375	49.562	50.706	8	5.07

**Steel Pipe**  
For Steam, Gas and Water  
Extra Strong and Double Extra Strong  
Black and Galvanized



Furnished with plain ends and in random lengths unless otherwise ordered.

Random length of extra strong and double extra strong pipe is considered to be 12 feet to 22 feet, we to have the privilege, however, of supplying not exceeding 5 per cent of total order in lengths from 6 to 12 feet.

For pipe fitted with threads only or with threads and couplings, an extra charge will be made above plain ends.

For cut lengths, an extra charge will be made above random.

For galvanized, or coated pipe, an extra charge will be made above black. Copper bearing steel pipe can also be furnished in the same weights and dimensions.

**All Weights and Dimensions are Nominal**

Revised January 1, 1923

**Extra Strong**

Size Inches	DIAMETER, INCHES		Thick- ness Inches	Weight Pounds per Foot Plain Ends	Price per Foot
	External	Internal			
$\frac{1}{8}$	.405	.215	.095	.314	\$.12
$\frac{1}{4}$	.540	.302	.119	.535	.07 $\frac{1}{2}$
$\frac{3}{8}$	.675	.423	.126	.738	.07 $\frac{1}{2}$
$\frac{1}{2}$	.840	.546	.147	1.087	.11
$\frac{3}{4}$	1.050	.742	.154	1.473	.15
1	1.315	.957	.179	2.171	.22
1 $\frac{1}{4}$	1.660	1.278	.191	2.996	.30
1 $\frac{1}{2}$	1.900	1.500	.200	3.631	.36 $\frac{1}{2}$
2	2.375	1.939	.218	5.022	.50 $\frac{1}{2}$
2 $\frac{1}{2}$	2.875	2.323	.276	7.661	.77
3	3.500	2.900	.300	10.252	1.03
3 $\frac{1}{2}$	4.	3.364	.318	12.505	1.25
4	4.500	3.826	.337	14.983	1.50
4 $\frac{1}{2}$	5.	4.290	.355	17.611	1.80
5	5.563	4.813	.375	20.778	2.08
6	6.625	5.761	.432	28.573	2.86
7	7.625	6.625	.500	38.048	3.81
8	8.625	7.625	.500	43.388	4.34
9	9.625	8.625	.500	48.728	4.90
10	10.750	9.750	.500	54.735	5.48
11	11.750	10.750	.500	60.075	6.10
12	12.750	11.750	.500	65.415	6.55

The permissible variation in weight is 5 per cent above and 5 per cent below.

**Double Extra Strong**

Size Inches	DIAMETER, INCHES		Thick- ness Inches	Weight Pounds per Foot Plain Ends	Price per Foot
	External	Internal			
$\frac{1}{2}$	.840	.252	.294	1.714	\$.32
$\frac{3}{4}$	1.050	.434	.308	2.440	.35
1	1.315	.599	.358	3.659	.37
1 $\frac{1}{4}$	1.660	.896	.382	5.214	.52 $\frac{1}{2}$
1 $\frac{1}{2}$	1.900	1.100	.400	6.408	.65
2	2.375	1.503	.436	9.029	.91
2 $\frac{1}{2}$	2.875	1.771	.552	13.695	1.37
3	3.500	2.300	.600	18.583	1.86
3 $\frac{1}{2}$	4.	2.728	.636	22.850	2.30
4	4.500	3.152	.674	27.541	2.76
4 $\frac{1}{2}$	5.	3.580	.710	32.530	3.26
5	5.563	4.063	.750	38.552	3.86
6	6.625	4.897	.864	53.160	5.32
7	7.625	5.875	.875	63.079	6.35
8	8.625	6.875	.875	72.424	7.25

The permissible variation in weight is 10 per cent above and 10 per cent below.



## Large O. D. Steel Pipe Plain Ends

Revised Jan. 1, 1923

All Weights and Dimensions are Nominal

O. D. In.	1/4	5/16	3/8	7/16	1/2	5/8
14	\$3.68	\$4.57	\$5.46	\$6.34	\$7.21	\$8.08
15	3.94	4.91	5.86	6.81	7.75	8.68
16	4.21	5.24	6.26	7.28	8.28	9.28
17	4.48	5.57	6.66	7.74	8.82	9.88
18	4.74	5.91	7.06	8.21	9.35	10.48
20	.....	6.58	7.86	9.15	10.42	11.68
21	.....	6.91	8.27	9.61	10.95	12.28
22	.....	7.24	8.67	10.08	11.49	12.88
24	.....	.....	9.47	11.01	12.55	14.09
26	.....	.....	10.27	11.95	13.62	15.29
28	.....	.....	.....	12.88	14.69	16.49
30	.....	.....	.....	13.82	15.76	17.69

O. D. In.	5/8	1 1/16	3/4	7/8	1	1 1/8
14	\$8.93	\$9.78	\$10.62	\$12.27	.....	.....
15	9.60	10.51	11.42	13.20	.....	.....
16	10.27	11.25	12.22	14.14	.....	.....
17	10.94	11.98	13.02	15.07	.....	.....
18	11.60	12.72	13.82	16.01	.....	.....
20	12.94	14.19	15.42	17.88	.....	.....
21	13.61	14.92	16.23	.....	.....	.....
22	14.27	15.65	17.03	.....	.....	.....
24	15.61	17.12	18.63	.....	.....	.....
26	16.94	18.59	20.23	.....	.....	.....
28	18.28	20.06	21.83	.....	.....	.....
30	19.61	21.53	23.43	.....	.....	.....

### Estimated Weights

O. D. In.	1/4	5/16	3/8	7/16
14	36.713	45.682	54.568	63.371
15	39.383	49.020	58.573	68.044
16	42.053	52.357	62.579	72.716
17	44.723	55.695	66.584	77.389
18	47.393	59.032	70.589	82.061
20	.....	65.708	78.599	91.407
22	.....	69.045	82.604	96.079
24	.....	72.383	86.609	100.752
26	.....	.....	94.619	110.097
28	.....	.....	102.629	119.442
30	.....	.....	.....	128.787
.....	.....	.....	.....	138.132

O. D. In.	1/2	5/8	3/4	7/8	1	1 1/8
14	72.091	80.726	89.279	97.748	.....	.....
15	77.431	86.734	95.954	105.091	.....	.....
16	82.771	92.742	102.629	112.433	.....	.....
17	88.111	98.749	109.304	119.776	.....	.....
18	93.451	104.757	115.979	127.118	.....	.....
20	104.131	116.772	129.330	141.804	.....	.....
21	109.471	122.780	136.005	149.146	.....	.....
22	114.811	128.787	142.680	156.489	.....	.....
24	125.491	140.802	156.030	171.174	.....	.....
26	136.172	152.818	169.380	185.859	.....	.....
28	146.852	164.833	182.730	200.545	.....	.....
30	157.532	176.848	196.081	215.230	.....	.....

O. D. In.	3/4	1	1 1/8
14	106.134	122.654	.....
15	114.144	132. ....	.....
16	122.154	141.345	.....
17	130.164	150.690	.....
18	138.174	160.035	.....
20	154.194	178.725	.....
21	162.204	.....	.....
22	170.215	.....	.....
24	186.235	.....	.....
26	202.255	.....	.....
28	218.275	.....	.....
30	234.296	.....	.....

The permissible variation in weight is 10 per cent above or 10 per cent below.

Pipe will be shipped in random lengths, plain ends, unless otherwise ordered. For cut lengths an extra charge above random will be made. For threaded pipe an extra charge above plain end will be made.

## Pipe Cutting and Fitting

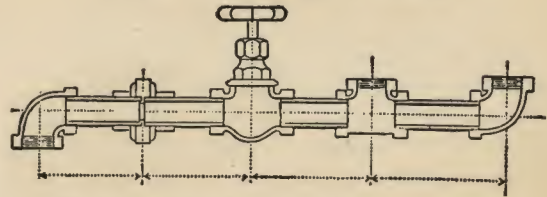


Diagram Showing Screwed Valves and Fittings

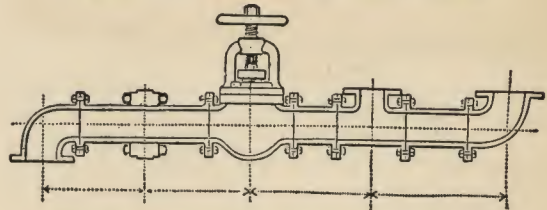


Diagram Showing Flanged Valves and Fittings

We are in a position to furnish quickly pipe cutting, threading and fitting all sizes of pipe to order.

In laying out work of this kind, great care should be taken in making sketches. All measurements should be given center to center as shown in diagrams. It is also necessary to know for what purpose the pipe is to be used and pressure required to stand.

If flanged fittings are to be used state if desired drilled and if with bolts and gaskets complete. Flanges, flanged fittings and valves are drilled in multiples of four, so that they may be made to place in any quarter and bolts straddle the center line. It is always advisable to send templates when drilling of valves or fittings is required.

### Cuts and Threads for Standard Wrought Pipe

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/8	\$.05	1 1/4	\$.07	4	\$.35	9	\$1.25
1/4	.05	1 1/2	.08	4 1/2	.45	10	1.50
3/8	.05	2	.10	5	.55	12	2.50
1/2	.05	2 1/2	.15	6	.70	.....	.....
3/4	.05	3	.20	7	.85	.....	.....
1	.06	3 1/2	.25	8	1.00	.....	.....

### Locknut Threads

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/4	\$.10	3/4	\$.10	1 1/2	\$.16	3	\$.40
3/8	.10	1	.12	2	.20	3 1/2	.50
1/2	.10	1 1/4	.14	2 1/2	.30	4	.70

### Wrought Lock-nut or Tank Nipples



No. 706

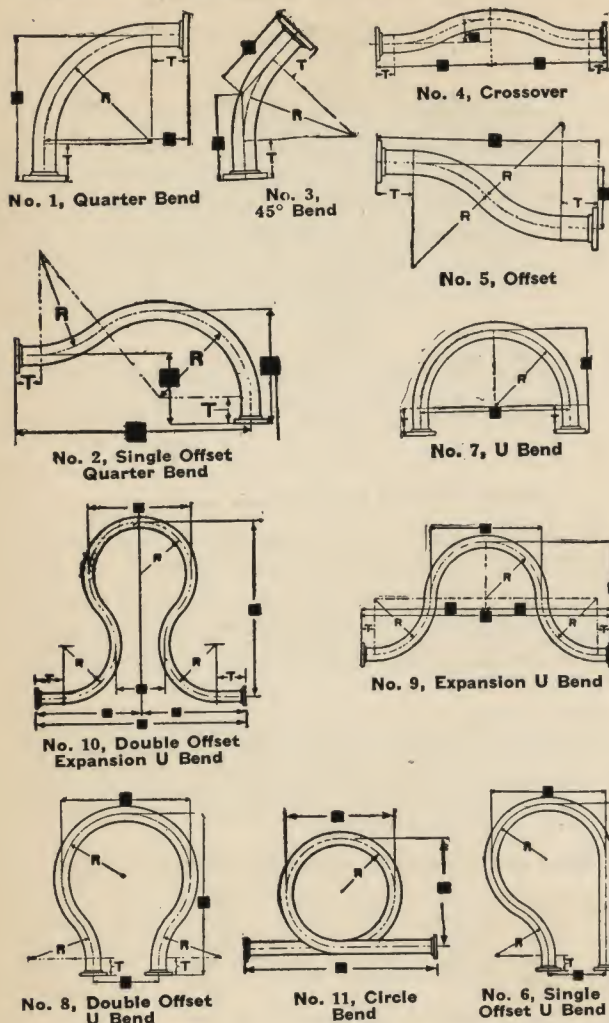
This nipple has standard lock-nut thread 4 inches long on one end; the other end has a standard pipe thread.

It is not furnished over 6 inches long.

Size Inches	PRICE, EACH	Size Inches	PRICE, EACH
1/4	Black \$1.10 Galvanized \$1.17	1 1/4	Black \$1.24 Galvanized \$1.38
3/8	.10 .17	1 1/2	.29 .46
1/2	.12 .18	2	.38 .61
3/4	.13 .21	2 1/2	.68 1.00
1	.18 .28	3	.85 1.30



## Pipe Bends Made from Lap Welded Pipe

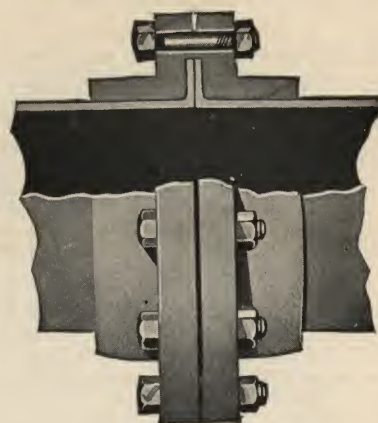


Size of Pipe Inches	R Minimum Advisable Radius of Bends Inches	SHORTEST RADIUS TO WHICH PIPE CAN BE BENT, INCHES		T—MINIMUM LENGTH OF TANGENT OR STRAIGHT PART, IN.		
		*Stand.	†XStrong	Screwed and Shrunk	Steel Welded	Van Stone
2½	12½	10	7	4	5	6
3	15	12	8	4	5	6
3½	17½	14	10	5	5	6
4	20	16	12	5	5	6
4½	22½	18	14	6	5	6
5	25	20	15	6	5	7
6	30	26	20	7	6	7
7	35	30	24	8	6	8
8	40	34	28	9	6	8
9	45	42	35	11	6	9
10	50	45	40	12	7	10
12	60	54	50	14	7	10
14	70	70	65	16	7	14
15	75	75	70	16	7	14
16	80	80	78	18	8	16
18	108	90	88	18	8	18
20	120	104	104	18	8	18
22	132	132	132	18	9	20
24	144	144	144	18	9	20

\*For 14-inch O. D. pipe and larger having ⅞-inch or lighter metal.

†For 14-inch O. D. pipe and larger having ½-inch or heavier metal.

Full dimension sketch or blue print should accompany all inquiries or orders for bends, also include dimensions R, T, and dimensions marked \* where necessary, and any other variations from above table.

Flanged Pipe Joints  
Van Stone Type or Lap Joints

Van Stone Type or Lap Joint Flanges are made in the following patterns:

## Standard Weight

Cast Iron High Hub  
Semi-Steel High Hub  
Cast Steel High Hub  
Forged Steel High Hub  
Cast Steel Low Hub  
Forged Steel Low Hub

## Extra Heavy Weight

Cast Iron Low Hub  
Semi-Steel Low Hub  
Cast Steel Low Hub  
Forged Steel Low Hub  
Cast Iron High Hub  
Semi-Steel High Hub  
Cast Steel High Hub  
Forged Steel High Hub

The principal advantages of the Van Stone Type Joint are:

1. The gasket bears on the face of the lap and absolutely prevents leakage through the bore of the flange.
2. The advantage of the swivel flange in lining up a piping installation is obvious.
3. The pipe is not weakened by cutting into the wall, which is necessary with a threaded flange.
4. It is not subject to torsional strains in attaching, as the screwed flange is.
5. The corners of the lap with the bore of the pipe are square, eliminating a slight enlargement of the bore at each joint which might otherwise create small pockets of condensation in the line, and it is important to avoid these.

Steel Headers  
With Welded-In Nozzles

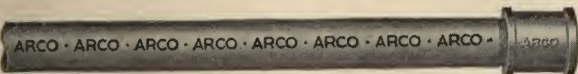
Welded headers are made in any desired form and the use of them eliminates joints in great number, such as tees and Y fittings. The number of inlets and outlets connected into a single header is limited practically only by the number desired. The connected pieces or nozzles may be welded in at any required angle. Nozzles may be provided with Van Stone type cap joints and swivel flanges, or they may be formed of a single forged piece.



## Arco Metal Cast Pipe

## Nipples and Couplings

Extra Heavy I.P.S.—1½ to 6 Inches Inclusive  
Regularly Furnished in 12-Foot Random Lengths



Arco Metal Pipe, Couplings and Nipples can be readily distinguished by the Arco red surface with the black stripe on one side and the name Arco in black on the other.

Arco Metal Pipe is a threaded joint, corrosion-resisting, high quality cast pipe made of superior alloy iron.

It is made in the following sizes: 1½, 2, 2½, 3, 4, 5 and 6 inches with the same outside and inside diameters as extra strong wrought steel or iron pipe.

It can be cut and threaded at any point within its own length with all standard tools which are used on wrought steel or iron pipe and does not have to be reamed after cutting.

Each length is tested by hydrostatic pressure, the test ranging from 300 to 1000 pounds per square inch.

It is true to dimensions, smooth outside and inside.

It is free from casting strains.

It is uniform in wall thickness.

All standard flow tables for extra strong wrought steel and iron pipe can be used to figure the capacity of Arco Metal Pipe.

It is resistant to both corrosion and erosion and will not scale inside, cutting down the flow area.

Arco Metal Pipe has already proven its superiority in installations for the following uses:

- Plumbing soil waste and vents.
- Heating condensation lines.
- Buried lines in cinder fills and corrosive soils.
- Chemical process manufacturing lines.
- Industrial waste lines.
- Power plants.
- Creameries.
- Paper mills.
- Submerged lines in salt water.
- Mine water lines.
- Oil refineries.

Sizes 1½ to 6 inches inclusive are made in lengths of approximately 12 feet, and are regularly shipped loose, threaded each end with thread protectors.

Couplings are not furnished with pipe but must be ordered separately as fittings.

Plain end pipe can be furnished when so ordered.

Lengths longer than 12 feet can be furnished in all sizes by the use of a cast iron weld of the same material used in the pipe. This weld is guaranteed to have as great strength and as long life as the rest of the pipe. Every weld is carefully tested and inspected before shipment.

## All Weights and Dimensions Are Nominal

Size Inches	Per Foot	DIAMETER, INCHES		Wall Thick- ness Inches	No. of Threads per Inch of Screw	Feet per Ton	Weight Pounds per Foot Thread- ed End
		External	Internal				
1½	\$ .33	1.9	1.5	.200	11½	606	3.3
2	.47	2.375	1.939	.218	11½	425.5	4.7
2½	.65	2.875	2.323	.276	8	307.7	6.5
3	.87	3.5	2.9	.300	8	230	8.7
4	1.32	4.5	3.826	.337	8	151.5	13.2
5	1.87	5.563	4.813	.375	8	107	18.7
6	2.47	6.625	5.761	.432	8	81	24.7

Further information upon application.

## Arco Metal Nipples

## Right Hand



Long Nipple

Arco metal nipples like Arco metal pipe are made of corrosion-resisting high quality cast pipe made of superior alloy iron. Pieces are joined by threading pipe and coupling in same manner as commercial wrought steel and wrought iron pipe.

Made from special analysis nickel-chrome alloy iron and is cast by a process which insures a structure in the resultant product that not only possesses superior strength but is also extremely resistant to the corrosive as well as the erosive action of acids and alkalis.

Size Inches	Closed or Short Each	Long Each	LENGTH, INCHES					
			Close	Short	LONG			
1½	\$ .26	\$ .40	1¾	2½	3	3½	4	4½
2	.36	.54	2	2½	3	3½	4	4½
2½	.78	1.18	2½	3	3½	4	4½	5
3	.96	1.44	2¾	3	3½	4	4½	5
4	1.70	2.40	2¾	4	4½	5	5½	6
5	3.10	4.90	3	4½	5	5½	6	6½
6	3.70	5.80	3½	4½	5	5½	6	6½

## Extra Long Nipples

Size	LENGTH, INCHES						
	5	6	7	8	9	10	11
1½	\$ .50	\$ .58	\$ .72	\$ .80	\$ .90	\$ 1.00	\$ 1.08
2	.64	.76	1.00	1.08	1.18	1.30	1.44
2½	....	1.36	1.80	1.94	2.12	2.34	2.52
3	....	1.70	2.16	2.40	2.66	2.90	3.16
4	....	....	3.04	3.38	3.74	4.10	4.44
5	....	....	5.16	5.66	6.20	6.70	7.20
6	....	....	6.10	6.70	7.40	8.00	8.60

## Arco Metal Right Hand Couplings

Size Inches	Length Inches	Each	Wt., Lbs. per 100	O.D. Inches
1½	2½	\$ .15	100	2½
2	2½	.24	162	3
2½	2½ <sup>16</sup>	.35	250	3½
3	3½	.55	380	4¼
4	4½	1.05	790	5½
5	5	1.64	1310	6¾
6	5½	2.46	1850	8

## Arco Metal Drainage Couplings

Size Inches	Length Inches	Each	Wt., Lbs. per 100	O. D. Inches
1½	2½	\$ .18	130	2½
2	2½	.25	180	3
2½	3½	.50	360	3½
3	3½	.65	460	4¼
4	4½	1.20	910	5½
5	5	1.90	1440	6¾
6	5½	2.85	2140	8



## Telephone Your Orders



We are organized to  
give Special Service on  
Telephone orders.

Use the telephone  
and save time.



## Cast Iron Water Pipe

Bell and Spigot and Turned and Bored



## Standard Thickness and Weights of Cast Iron Pipe

Nom. I. D. In.	Class A Gas		Class B Standard		Class C Medium Heavy		Class D Extra Heavy	
	100-Ft. HEAD 43 LBS. PRESS.	Thick- ness In.	200-Ft. HEAD 86 LBS. PRESS.	Thick- ness In.	300-Ft. HEAD 130 LBS. PRESS.	Thick- ness In.	400-Ft. HEAD 173 LBS. PRESS.	Thick- ness In.
3	.38	13.9	.42	15.4	.48	23.3	.52	25
4	.42	20	.45	21.7	.51	35.8	.55	38.3
6	.44	30.8	.48	33.3	.56	52.1	.60	55.8
8	.46	42.9	.51	47.5	.62	70.8	.68	76.7
10	.50	57.1	.57	63.8	.68	91.7	.75	100
12	.54	72.5	.62	82.1	.74	116.7	.82	129.2
14	.57	89.6	.66	102.5	.80	143.8	.89	158.3
16	.60	108.3	.70	125	.87	175	.96	191.7
18	.64	129.2	.75	150	.92	208.3	1.03	229.2
20	.67	150	.80	175	1.04	279.2	1.16	306.7
24	.76	204.2	.89	233.3	1.20	400	1.37	450
30	.88	291.7	1.03	333.3	1.36	545.8	1.58	625
36	.99	391.7	1.15	454.2	1.54	716.7	1.78	825
42	1.10	512.5	1.28	591.7	1.71	908.3	1.96	1050
48	1.26	666.7	1.42	750	1.90	1141.7	2.23	1341.7
54	1.35	800	1.55	933.3	2	1341.7	2.38	1583.3
60	1.39	916.7	1.67	1104.2	2.39	1904.2	.....	.....
72	1.62	1283.4	1.95	1545.8	.....	.....	.....	.....
84	1.72	1633.4	2.22	2104.2	.....	.....	.....	.....

All lengths to lay 12 feet. All weights are approximate; those per foot include allowance for bell. All pipe is tested by water pressure. Turned and bored pipe made to order only.

Inquiries and orders should clearly indicate the approximate number of lengths or feet of pipe of each size and class required. Give the desired delivery point and time of shipment, with any particulars as to sizes required first, the service intended, etc. This will facilitate prompt attention and avoid delays.

Two-inch pipe and fittings also furnished.

## Approximate Weights of Lead and Hemp Required for Joints

Pipe In.	Wt., Lbs.		Pipe In.	Wt., Lbs.		Pipe In.	Wt., Lbs.	
	Lead	Hemp		Lead	Hemp		Lead	Hemp
3	6	.18	16	30	.94	48	85.5	4.37
4	7.5	.21	18	33.8	1	54	97.6	6.25
6	10.25	.31	20	37	1.25	60	108.3	8.25
8	13.25	.44	24	44	1.50	72	128	12.50
10	16	.53	30	54.25	2.06	84	147	15.00
12	19	.61	36	64.75	3	..	.....	.....
14	22	.81	42	75.25	3.62	..	.....	.....

## Flanged



Flanged cast iron pipe, sizes 3 to 48 inches, same thickness as standard pipe. Thickness of flange equals approximately  $1\frac{1}{2}$  times thickness of pipe, plus  $\frac{1}{8}$  inch. Pipe made in 12-foot lengths and faced  $\frac{1}{16}$  inch short for gaskets.

## Specials for Cast Iron Pipe

## Class D

## 90° Quarter Bends



Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
4	82	16	750
6	130	18	888
8	200	20	1070
10	278	24	1656
12	366	30	2836
14	504	36	4820

## 45° Eighth Bends

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
4	66	12	265	20	964
6	105	14	442	24	1515
8	150	16	558	30	2291
10	202	18	663	36	4012



## 22 1/2° Sixteenth Bends

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
4	66	10	202	16	484
6	105	12	265	18	574
8	150	14	382	20	858
				24	1372
				30	2080
				36	4012

## Tees



Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4	128	10x10x 6	352	16x16x16	969
6x 6x 6	200	10x10x 4	338	16x16x12	861
6x 6x 4	183	12x12x12	512	20x20x20	1438
8x 8x 8	294	12x12x10	491	24x24x24	2113
8x 8x 6	270	12x12x 8	474	30x30x30	3660
8x 8x 4	255	12x12x 6	458	36x36x36	5567
10x10x10	395	12x12x 4	445	48x48x48	.....
10x10x 8	371	14x14x14	724	.....	.....

## Crosses



Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4x 4	166	10x10x 6x 6	406	16x16x16x16	1259
6x 6x 6x 6	257	10x10x 4x 4	377	18x18x18x18	1454
6x 6x 4x 4	221	12x12x12x12	623	20x20x20x20	1828
8x 8x 8x 8	372	12x12x10x10	577	24x24x24x24	2694
8x 8x 6x 6	325	12x12x 8x 8	545	30x30x30x30	4609
8x 8x 4x 4	294	12x12x 6x 6	512	36x36x36x36	6857
10x10x10x10	493	12x12x 4x 4	486	48x48x48x48	.....
10x10x 8x 8	443	14x14x14x14	963	.....	.....



Plug

## Plugs and Caps



Cap

Size In.	Wt., Lbs.	Size In.	Wt., Lbs.	Size In.	Wt., Lbs.
4	8	14	65	30	723
6	14	16	96	36	1050
8	24	18	121	48	2047
10	38	20	156	54	2733
12	50	24	472	60	3397
					3687

## Sleeves



Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
4	15	61	14	18	280	30	24	1262
6	15	87	16	24	443	36	24	1772
8	15	119	18	24	518	48	24	2879
10	18	176	20	24	625	54	24	3571
12	18	223	24	24	821	60	24	4231



## Special for Cast Iron Pipe

## Class D

## Y Branches



Y Branch

Size In.	Wt. Lbs.
4x 4	103
6x 6	181
8x 8	291
10x10	434
12x12	632
14x14	985
16x16	1413
18x18	1737
20x20	2199
24x24	3599



Reducer



Increaser

## Reducers

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
6x 4	97	12x 6	202	16x10	364	20x12	576
8x 6	143	12x 8	179	18x16	569	24x20	987
8x 4	119	14x12	360	18x14	502	24x18	901
10x 8	198	14x10	320	18x12	446	24x16	838
10x 6	169	14x 8	288	18x10	405	24x14	764
10x 4	146	14x 6	256	20x18	776	30x24	1398
12x10	261	16x14	461	20x16	711	36x30	2264
12x 8	231	16x12	405	20x14	638	.....	.....

## Increasers

4x 6	104	6x 8	150	8x10	201	12x14	378
4x 8	132	6x10	180	8x12	240	.....	...
4x10	162	6x12	218	10x12	267	.....	....

## Split Tees

With any size outlet.

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	60	14	293
4	103	16	355
6	115	18	400
8	165	20	460
10	245	24	563
12	275	..	...



## Split Sleeves

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	50	14	268
4	91	16	323
6	101	18	368
8	151	20	423
10	225	24	513
12	250	..	...



## Flanges and Spigots



Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
3	16	24	10	18	140	18	20	340
4	16	38	12	18	173	20	20	425
6	16	60	14	18	220	24	24	635
8	16	90	16	20	255	..	..	...

## Flanges and Bells

Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
3	4	24	14	6	220
4	4	38	16	6	275
6	4	60	18	6	325
8	4	90	20	6	395
10	6	140	24	6	520
12	6	173	..	..	...



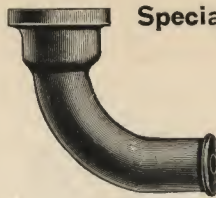
## Flanges

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	10	10	45	18	117
4	15	12	59	20	153
6	20	14	80	24	210
8	32	16	105	..	...



## Specials for Cast Iron Pipe

## \*Tapped Elbows



Size Inches	Each	Size Inches	Each
3	.....	8	.....
4	.....	10	.....
6	.....	..	.....

\*Made to order only.

## Tapped Tees

Size Inches	Each	Size Inches	Each
3	\$13.75	6	\$28.25
4	19.50	8	34.25



Tapped tees are made 12-inch laying length, unless otherwise ordered.

## \*Tapped Reducers



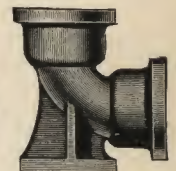
Size Inches	Each	Size Inches	Each
3	.....	8	.....
4	.....	10	.....
6	.....	..	.....

Fittings 6-inch and smaller tapped any size from 3/4 to 2-inch; 8-inch and larger tapped any size from 3/4 to 3-inch. In ordering, state size of tapping desired.

\*Made to order only.

## Base Elbows with Bell Ends

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	91	6	180	10	354
4	119	8	276	12	457



Prices upon application.

## Tapped Couplings



Used to connect wrought iron with cast iron pipe of same size.

Size In.	Lgth. In.	Each	Size In.	Lgth. In.	Each
3	7 1/4	\$7.25	8	7 7/8	\$14.00
4	7 1/4	7.50	10	7 3/4	18.50
6	7 1/4	10.25	12	8	21.75

## Tapped Plugs

For connecting wrought iron pipe to larger cast iron pipe.

Size In.	Each	Size In.	Each	Size In.	Each
3	\$5.50	6	\$7.25	10	\$12.00
4	6.00	8	10.25	12	13.50



Tapped 2 inches and smaller. Plugs tapped larger than 2 inches, add to above list prices as follows: 2 1/2-inch, \$1.00; 3-inch, \$1.50; 4-inch, \$2.00; 5-inch, \$2.50; 6-inch, \$3.00.

## Tapped Caps

For connecting wrought iron pipe to larger cast iron pipe.



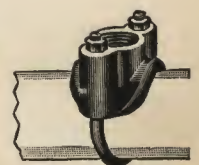
Size In.	Each	Size In.	Each	Size In.	Each
3	\$7.50	6	\$13.75	10	\$18.75
4	10.50	8	15.00	12	24.75

Tapped 2 inches and smaller. Plugs tapped larger than 2 inches, extra net as follows: 2 1/2-inch, \$1.00; 3-inch, \$1.50; 4-inch, \$2.00; 5-inch, \$2.50; 6-inch, \$3.00.

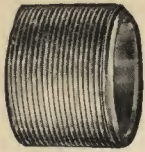
## Saddles

For C.I.  
Pipe, In.

Tapped for Pipe, In.	Each
3	\$6.75
4	9.50
6	10.00
6	12.25
8	15.25
8	15.25
10	15.50
10	15.50
12	18.25
14	21.50







Close

## Wrought Nipples

## Plain, Right Hand



Short

EACH												LENGTH, INCHES					
Size In.	Close or Short		Long	LENGTH, INCHES								Close	Short	LONG			
	4	5		6	7	8	9	10	11	12	2			2 1/2	3	3 1/2	
1/8	\$.04	\$.06	\$.07	\$.08	\$.10	\$.12	\$.14	\$.15	\$.17	\$.18	\$.19	3/4	1 1/2	2	2 1/2	3	3 1/2
1/4	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19	7/8	1 1/2	2	2 1/2	3	3 1/2
3/8	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19	1	1 1/2	2	2 1/2	3	3 1/2
1/2	.05	.07	.08	.10	.12	.14	.16	.18	.20	.22	.23	1 1/8	1 1/2	2	2 1/2	3	3 1/2
3/4	.06	.09	...	.11	.13	.17	.18	.20	.22	.24	.26	1 3/8	2	2 1/2	3	3 1/2	4
1	.08	.13	...	.15	.18	.23	.25	.28	.31	.34	.36	1 1/2	2	2 1/2	3	3 1/2	4
1 1/4	.11	.17	...	.20	.24	.29	.33	.36	.40	.44	.47	1 5/8	2 1/2	3	3 1/2	4	4 1/2
1 1/2	.13	.20	...	.25	.29	.36	.40	.45	.50	.54	.59	1 3/4	2 1/2	3	3 1/2	4	4 1/2
2	.18	.27	...	.32	.38	.50	.54	.59	.65	.72	.77	2	2 1/2	3	3 1/2	4	4 1/2
2 1/2	.39	.59	...	...	.68	.90	.97	1.06	1.17	1.26	1.35	2 1/2	3	3 1/2	4	4 1/2	5
3	.48	.72	...	...	.85	1.08	1.20	1.33	1.45	1.58	1.70	2 5/8	3	3 1/2	4	4 1/2	5
3 1/2	.75	1.05	...	...	...	1.30	1.45	1.60	1.75	1.90	2.05	2 3/4	4	4 1/2	5	5 1/2	6
4	.85	1.20	...	...	...	1.52	1.69	1.87	2.05	2.22	2.40	2 7/8	4	4 1/2	5	5 1/2	6
4 1/2	1.25	1.70	...	...	...	2.25	2.50	2.75	2.95	3.17	3.40	2 7/8	4	4 1/2	5	5 1/2	6
5	1.55	2.45	...	...	...	2.58	2.83	3.10	3.35	3.60	3.85	3	4 1/2	5	5 1/2	6	6 1/2
6	1.85	2.90	...	...	...	3.05	3.35	3.70	4.00	4.30	4.65	3 1/8	4 1/2	5	5 1/2	6	6 1/2
7	3.20	...	...	...	3.60	4.05	4.45	4.90	5.30	5.75	6.15	3 1/4	5	...	...	...	...
8	3.55	...	...	...	4.05	4.55	5.05	5.50	6.00	6.50	7.00	3 1/2	5	...	...	...	...
9	5.25	...	...	...	...	...	6.50	7.10	7.75	8.40	9.00	3 5/8	5	...	...	...	...
10	6.75	...	...	...	...	...	8.25	8.90	9.70	10.40	11.15	3 7/8	5	...	...	...	...
12	8.00	...	...	...	...	...	10.00	10.80	11.75	12.70	13.65	4 1/2	6	...	...	...	...

Galvanized, Right Hand												LENGTH, INCHES					
Size In.	Close or Short	Long	4	5	6	7	8	9	10	11	12	Close	Short	LONG			
1/8	\$.06	\$.11	\$.12	\$.15	\$.17	\$.21	\$.24	\$.26	\$.29	\$.31	\$.34	3/4	1 1/2	2	2 1/2	3	3 1/2
1/4	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34	7/8	1 1/2	2	2 1/2	3	3 1/2
3/8	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34	1	1 1/2	2	2 1/2	3	3 1/2
1/2	.06	.11	.13	.16	.18	.23	.26	.28	.31	.33	.36	1 1/8	1 1/2	2	2 1/2	3	3 1/2
3/4	.08	.14	...	.18	.21	.26	.29	.32	.35	.38	.41	1 3/8	2	2 1/2	3	3 1/2	4
1	.11	.19	...	.24	.28	.34	.38	.42	.47	.51	.55	1 1/2	2	2 1/2	3	3 1/2	4
1 1/4	.17	.29	...	.32	.38	.45	.51	.57	.63	.69	.75	1 5/8	2 1/2	3	3 1/2	4	4 1/2
1 1/2	.21	.35	...	.39	.46	.55	.63	.70	.77	.84	.91	1 3/4	2 1/2	3	3 1/2	4	4 1/2
2	.27	.47	...	.52	.61	.74	.83	.93	1.03	1.13	1.23	2	2 1/2	3	3 1/2	4	4 1/2
2 1/2	.56	.86	...	...	1.00	1.26	1.41	1.56	1.71	1.86	2.01	2 1/2	3	3 1/2	4	4 1/2	5
3	.70	1.10	...	...	1.30	1.60	1.80	2.00	2.20	2.40	2.60	2 5/8	3	3 1/2	4	4 1/2	5
3 1/2	1.20	1.70	...	...	...	2.10	2.35	2.60	2.85	3.15	3.40	2 3/4	4	4 1/2	5	5 1/2	6
4	1.35	1.87	...	...	...	2.30	2.60	2.90	3.20	3.50	3.80	2 7/8	4	4 1/2	5	5 1/2	6
4 1/2	1.85	2.60	...	...	...	3.30	3.65	4.05	4.45	4.85	5.25	2 7/8	4	4 1/2	5	5 1/2	6
5	2.30	3.15	...	...	...	3.75	4.20	4.60	5.00	5.40	5.85	3	4 1/2	5	5 1/2	6	6 1/2
6	2.80	4.25	...	...	...	4.50	5.00	5.55	6.05	6.60	7.15	3 1/8	4 1/2	5	5 1/2	6	6 1/2
7	4.25	...	...	...	4.95	5.65	6.35	7.05	7.75	8.45	9.20	3 1/4	5	...	...	...	...
8	5.00	...	...	...	5.80	6.65	7.50	8.35	9.25	10.10	10.95	3 1/2	5	...	...	...	...

Nipples will be made to order from extra strong pipe at double the above lists. Nipples longer than 12-inch are made to order and charged as cut pipe; threads extra.

## Plain, Right and Left Nipples

Size In.	Close or Short	Long	4	5	6	7	8	9	10	11	12	Close	Short	LONG			
1/8	\$.05	\$.08	\$.09	\$.11	\$.13	\$.16	\$.18	\$.20	\$.23	\$.25	\$.27	3/4	1 1/2	2	2 1/2	3	3 1/2
1/4	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27	7/8	1 1/2	2	2 1/2	3	3 1/2
3/8	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27	1	1 1/2	2	2 1/2	3	3 1/2
1/2	.07	.10	.11	.13	.16	.18	.21	.24	.27	.29	.31	1 1/8	1 1/2	2	2 1/2	3	3 1/2
3/4	.08	.12	...	.15	.17	.23	.25	.27	.29	.32	.35	1 3/8	2	2 1/2	3	3 1/2	4
1	.11	.18	...	.20	.24	.31	.33	.37	.41	.45	.48	1 1/2	2	2 1/2	3	3 1/2	4
1 1/4	.15	.23	...	.27	.32	.39	.45	.50	.55	.60	.65	1 5/8	2 1/2	3	3 1/2	4	4 1/2
1 1/2	.18	.27	...	.34	.39	.48	.52	.60	.67	.72	.80	1 3/4	2 1/2	3	3 1/2	4	4 1/2
2	.24	.36	...	.43	.51	.67	.72	.80	.87	.96	1.03	2	2 1/2	3	3 1/2	4	4 1/2
2 1/2	.52	.79	...	...	.91	1.20	1.30	1.40	1.55	1.68	1.80	2 1/2	3	3 1/2	4	4 1/2	5
3	.65	.96	...	...	1.13	1.44	1.60	1.77	1.93	2.10	2.27	2 5/8	3	3 1/2	4	4 1/2	5
3 1/2	1.00	1.40	...	...	...	1.75	1.95	2.15	2.35	2.55	2.75	2 3/4	4	4 1/2	5	5 1/2	6
4	1.15	1.60	...	...	...	2.00	2.25	2.50	2.75	3.00	3.25	2 7/8	4	4 1/2	5	5 1/2	6

\*These lengths conform to the manufacturers' standard.

For galvanized right and left and substitute nipples, add 60 per cent to above prices.

## Locknut or Tank Nipples

6 Inches Long Over All											LENGTH, INCHES					
Size	Each	Galvanized	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
1/8	\$.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
1/4	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
3/8	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
1/2	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
3/4	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
1	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
1 1/4	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
1 1/2	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
2	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
2 1/2	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
3	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
3 1/2	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90
4	.10	.17	.10	.17	.12	.13	.18	.24	.29	.38	.46	.61	1.00	1.30	1.60	1.90

These nipples have American Briggs standard locknut thread 4 inches long on one end, and standard pipe thread on the other end.



### Cast Iron Screwed Fittings Straight Elbows



No. 300, Right-Hand



No. 301, Right and Left

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	RIGHT HAND Black	Galv.		RIGHT HAND Black	Galv.
1/4	\$ .05	\$ .10	3 1/2	\$1.05	\$2.10
3/8	.05	.10	4	1.20	2.40
1/2	.06	.12	4 1/2	1.75	3.50
3/4	.08	.16	5	2.00	4.00
1	.10 1/2	.21	6	2.75	5.50
1 1/4	.16	.32	7	4.70	9.40
1 1/2	.20	.40	8	6.75	13.50
2	.28	.56	9	9.00	18.00
2 1/2	.50	1.00	10	13.50	27.00
3	.75	1.50	12	20.00	40.00

### Straight Pitched Elbows

Size Inches	Price Each Black	Size Inches	Price Each Black	Size Inches	Price Each Black
1/2	\$ .08	1 1/4	\$ .20	2 1/2	\$ .65
3/4	.10	1 1/2	.25	3	1.00
1	.13	2	.35	3 1/2	1.30



No. 303

### 60° Elbows

Size Inches	Price Each Black	Size Inches	Price Each Black
1/2	\$ .25	2 1/2	\$1.10
3/4	.30	3	1.65
1	.35	4	2.75
1 1/4	.45	5	5.00
1 1/2	.50	6	7.00
2	.60	...	...

### 22 1/2° Elbows

Size Inches	Price Each Black	Size Inches	Price Each Black	Size Inches	Price Each Black
1/2	\$ .25	1 1/2	\$ .50	4	\$2.75
3/4	.30	2	.60	5	5.00
1	.35	2 1/2	1.10	6	7.00
1 1/4	.45	3	1.65	...	...

### Reducing Elbows

Size Inches	Price, Each Black	Galv.	Size Inches	Price, Each Black	Galv.
3/8	\$ .06	...	3	\$ .85	\$1.70
1/2	.07	.14	3 1/2	1.20	2.40
3/4	.09	.18	4	1.40	2.80
1	.12	.24	4 1/2	2.00	4.00
1 1/4	.18	.36	5	2.30	4.60
1 1/2	.23	.46	6	3.15	6.30
2	.32	.64	7	5.40	10.80
2 1/2	.60	1.20	8	7.75	15.50



No. 302

Size In.	Price, Each Black	Galv.
9	\$10.50	\$21.00
10	15.50	31.00
12	23.00	46.00

### 45° Elbows

Size Inches	Price, Each Black	Galv.	Size Inches	Price, Each Black	Galv.
1/2	\$ .07	\$ .14	4	\$1.45	\$2.90
3/4	.10	.20	4 1/2	2.20	4.40
1	.12	.24	5	2.50	5.00
1 1/4	.19	.38	6	3.45	6.90
1 1/2	.24	.48	7	5.90	11.80
2	.34	.68	8	8.50	17.00
2 1/2	.60	1.20	9	11.25	22.50
3	.90	1.80	10	17.00	34.00
3 1/2	1.25	2.50	12	25.00	50.00

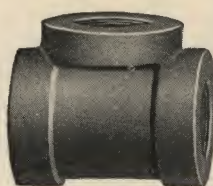


No. 304

### Pitched Reducing Elbows

Size Inches	Price Each Black	Size Inches	Price Each Black	Size Inches	Price Each Black
3/4	\$ .10	1 1/2	\$ .25	3	\$1.00
1	.13	2	.35	3 1/2	1.30
1 1/4	.20	2 1/2	.65	...	...

### Cast Iron Screwed Fittings Straight Tees



No. 309

Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
1/4	\$ .08	\$ .16	3 1/2	\$1.50	\$3.00
3/8	.08	.16	4	1.75	3.50
1/2	.09	.18	4 1/2	2.55	5.10
3/4	.12	.24	5	3.00	6.00
1	.15	.30	6	4.00	8.00
1 1/4	.23	.46	7	6.80	13.60
1 1/2	.29	.58	8	9.75	19.50
2	.41	.82	9	13.00	26.00
2 1/2	.73	1.46	10	19.50	39.00
3	1.10	2.20	12	29.00	58.00

### Reducing Tees



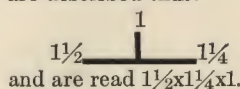
No. 310, on Run



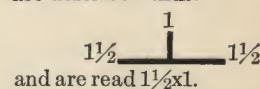
No. 311, on Outlet

Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
3/8	\$ .09	\$ .18	4	\$2.00	\$4.00
1/2	.10	.20	4 1/2	2.95	5.90
3/4	.14	.28	5	3.50	7.00
1	.17	.34	6	4.60	9.20
1 1/4	.27	.54	7	7.80	15.60
1 1/2	.33	.66	8	11.25	22.50
2	.47	.94	9	15.00	30.00
2 1/2	.83	1.66	10	22.50	45.00
3	1.25	2.50	12	33.50	67.00
3 1/2	1.75	3.50	...	...	...

Tees reducing on the run  
are described thus:

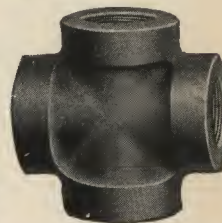


Tees reducing on the outlet  
are described thus:



### Straight Crosses

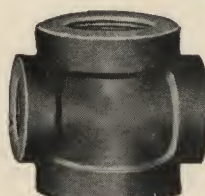
Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
1/2	\$ .16	\$ .32	4	\$3.15	\$6.30
3/4	.22	.44	4 1/2	4.60	9.20
1	.27	.54	5	5.50	11.00
1 1/4	.42	.84	6	7.25	14.50
1 1/2	.53	1.06	7	12.25	24.50
2	.75	1.50	8	17.50	35.00
2 1/2	1.30	2.60	9	23.50	47.00
3	2.00	4.00	10	35.00	70.00
3 1/2	2.70	5.40	12	52.50	105.00



No. 313

### Reducing Crosses

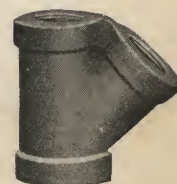
Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
1/2	\$ .18	\$ .36	4	\$3.50	\$7.00
3/4	.25	.50	4 1/2	5.10	10.20
1	.30	.60	5	6.00	12.00
1 1/4	.46	.92	6	8.00	16.00
1 1/2	.60	1.20	7	13.50	27.00
2	.83	1.66	8	19.25	38.50
2 1/2	1.45	2.90	9	26.00	52.00
3	2.20	4.40	10	38.50	77.00
3 1/2	3.00	6.00	12	58.00	116.00



No. 314

### Y Branches

Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
1/2	\$ .20	\$ .40	4	\$4.00	\$8.00
3/4	.28	.56	4 1/2	5.90	11.80
1	.34	.68	5	7.00	14.00
1 1/4	.54	1.08	6	9.20	18.40
1 1/2	.66	1.32	7	15.60	31.20
2	.94	1.88	8	22.50	45.00
2 1/2	1.66	3.32	10	45.00	90.00
3	2.50	5.00	12	67.00	134.00
3 1/2	3.50	7.00	...	...	...



No. 316



## Cast Iron Screwed Fittings

## Reducers

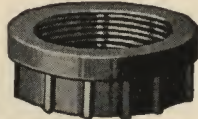


No. 318

Size In.	PRICE, EACH Black Galv.	Size In.	PRICE, EACH Black Galv.
4 1/2	\$1.85 \$3.70	8	\$6.75 \$13.50
5	2.00 4.00	9	8.35 16.70
6	2.70 5.40	10	10.00 20.00
7	5.35 10.70	12	15.00 30.00

## Caps

Size In.	PRICE, EACH Black Galv.	Size In.	PRICE, EACH Black Galv.
4	\$ .87 \$1.74	8	\$2.85 \$5.70
4 1/2	1.05 2.10	9	4.75 9.50
5	1.20 2.40	10	5.50 11.00
6	1.55 3.10	12	7.00 14.00
7	2.50 5.00	..	....



No. 319

## Bushings

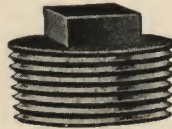


No. 320

Size In.	PRICE, EACH Black Galv.	Size In.	PRICE, EACH Black Galv.
3/8	\$ .04 \$ .08	4	\$ .50 \$1.00
1/2	.04 .08	4 1/2	.75 1.50
3/4	.05 .10	5	.93 1.85
1	.06 .12	6	1.25 2.50
1 1/4	.07 .14	7	1.87 3.75
1 1/2	.09 .18	8	2.75 5.50
2	.14 .28	9	3.25 6.50
2 1/2	.21 .42	10	3.75 7.50
3	.30 .60	12	5.00 10.00
3 1/2	.40 .80	....	....

## Plugs

Size In.	PRICE, EACH Black Galv.	Size In.	PRICE, EACH Black Galv.
1/8	\$ .02 \$ .04	3 1/2	\$ .38 \$ .76
1/4	.02 .04	4	.42 .84
3/8	.02 .04	4 1/2	.65 1.30
1/2	.02 .04	5	.88 1.75
3/4	.03 .06	6	1.20 2.40
1	.04 .08	7	1.85 3.70
1 1/4	.05 .10	8	2.75 5.50
1 1/2	.07 .14	9	3.25 6.50
2	.10 .20	10	3.75 7.50
2 1/2	.18 .36	12	5.00 10.00
3	.25 .50	....	....



No. 321

## Solid Plugs

Size In.	Price Each Black	Size In.	Price Each Black	Size In.	Price Each Black	Size In.	Price Each Black
1/4	\$ .04	1 1/4	\$ .09	3 1/2	\$ .57	*8	\$4.15
3/8	.04	1 1/2	.11	4	.63	*10	5.75
1/2	.04	2	.15	4 1/2	1.00	*12	7.50
3/4	.06	2 1/2	.27	5	1.35	*These sizes are the bar type.	
1	.08	3	.38	*6	1.80		

## Countersunk Plugs

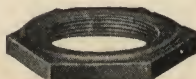


No. 322

Size In.	Price Each Black	Size In.	Price Each Black	Size In.	Price Each Black
1/4	\$ .04	1 1/4	\$ .09	3 1/2	\$ .92
3/8	.04	1 1/2	.11	4	1.10
1/2	.04	2	.15	5	2.00
3/4	.06	2 1/2	.30	6	3.50
1	.08	3	.40	...	....

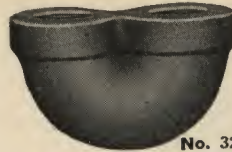
## Locknuts

Size In.	PRICE, EACH Black Galv.	Size In.	PRICE, EACH Black Galv.
2 1/2	\$ .27 \$ .54	6	\$1.30 \$2.60
3	.34 .68	7	1.70 3.40
3 1/2	.47 .94	8	2.35 4.70
4	.64 1.28	9	2.70 5.40
4 1/2	.85 1.70	10	3.00 6.00
5	.90 1.80	12	4.00 8.00



No. 323

## Cast Iron Close Pattern Return Bends



No. 324

Close pattern return bends will not make up parallel coils, as the distance, center to center, of two adjacent bends is greater than the center to center of openings of a single bend.

Size Inches	RIGHT HAND		EACH		Left Hand Black	Center to Center, In.
	Black	Galv.	R and L. Black	Galv.		
1/2	\$ .18	\$ .36	\$ .21		\$ .21	1 1/4
3/4	.20	.40	.23		.23	1 1/2
1	.22	.44	.26		.26	1 3/4
1 1/4	.28	.56	.33		.33	2 1/4
1 1/2	.40	.80	.46		.46	2 1/2
2	.57	1.14	.66		.66	3 1/4
2 1/2	1.20	2.40	1.40		1.40	3 3/4
3	1.70	3.40	1.95		1.95	4 1/4
4	5.00	10.00	5.25		5.25	6

## Cast Iron Open Pattern Return Bends



No. 325

Size In.	Center to Center	PRICE, EACH			Size In.	Center to Center	PRICE, EACH		
	In.	RIGHT Black	HAND Galv.	Right and Left Black		In.	RIGHT Black	HAND Galv.	Right and Left Black
3/4	1 7/8	\$ .26	\$ .52	.30	2	4 1/2	\$ .80	\$1.60	\$.92
1	2 3/8	.30	.60	.35	2 1/2	5 1/2	1.35	2.70	1.55
1 1/4	3	.40	.80	.46	3	6 1/2	2.20	4.40	2.50
1 1/2	3 1/2	.55	1.10	.64	4	7 1/2	6.50	10.00	....

## Cast Iron Wide Pattern Return Bends

Size In.	Center to Center In.	PRICE, EACH Black Galva-nized
3/4	6	\$ .60 \$1.10
1	3	.45 .80
1	4	.50 .90
1	4 1/2	.55 1.00
1	5	.60 1.10
1	6	.75 1.30
1	7	.90 1.45
1	8	1.00 1.60
1 1/4	4	1.00 1.75
1 1/4	5	1.15 1.90
1 1/4	6	1.25 2.00
1 1/4	9	2.75 5.30
1 1/2	5	1.30 2.30
1 1/2	6	1.60 2.60



No. 326

## Cast Iron Double Branch Reducing Elbows



Size Inches	Face to Face Inches	Center to Face Inches	Price Each
1 x 1 1/4	5 1/4	2 3/8	\$ .75
1 1/4 x 1 1/2	5 3/4	2 7/8	1.05
1 1/2 x 2	6 3/8	3 1/8	1.50
2 x 2 1/2	8 1/4	4	2.25
3 x 4	9 7/8	4 7/8	6.50

For sizes of reducing double sweep elbows not listed above, add 50 per cent to the above lists. For galvanized elbows double the above list.



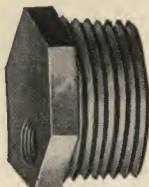
### Cast Iron Eccentric Reducing Couplings



Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1 1/4	\$ .55	3	\$2.40	5	\$6.00
No. 11 1/2	.72	3 1/2	3.00	6	8.00
331 2	1.00	4	4.00	7	9.00
2 1/2	1.50	4 1/2	5.00	8	11.00

### Cast Iron Eccentric Bushings

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1 1/4	\$ .22	3 1/2	\$ .80	7	\$3.75
1 1/2	.25	4	1.00	8	5.50
2	.27	4 1/2	1.50	9	6.50
2 1/2	.42	5	1.85	10	7.50
3	.60	6	2.50	12	10.00



No. 332

### Standard Cast Iron Flange Unions

For 125 Pounds Steam Working Pressure

Sizes 14-inch and larger are to be used with O. D. pipe of the same size.

Size In.	Diam. In.	No. of Bolts	Price, Each	Size In.	Diam. In.	No. of Bolts	Price, Each
1/2	2 3/4	3	\$ .40	5	9 1/8	5	\$3.15
3/4	3 3/8	3	.46	6	10 3/8	6	3.95
1	3 5/8	3	.52	7	11 5/8	7	5.50
1 1/4	4 1/8	4	.64	8	12 3/4	8	7.00
1 1/2	4 1/2	4	.78	9	13 7/8	9	10.00
2	5 1/8	4	1.00	10	15 1/2	10	11.50
2 1/2	5 7/8	4	1.25	12	17 7/8	12	16.00
3	6 5/8	4	1.50	14	20 5/8	14	28.00
3 1/2	7 1/4	4	1.80	15	20 5/8	14	35.00
4	7 3/4	5	2.10	16	23	16	60.00
4 1/2	8 3/8	5	2.70	...	...	...	...

### Extra Heavy Cast Iron Flange Unions

For 250 Pounds Saturated Steam Working Pressure



No. 415

Size Inches	Diameter Inches	No. of Bolts	Price Each	Size Inches	Diameter Inches	No. of Bolts	Price Each
1 1/2	3 1/4	4	\$ .70	4	8	7	\$3.15
3/4	3 3/4	4	.70	4 1/2	8 3/4	8	4.00
1	3 5/8	4	.80	5	9 3/8	8	4.75
1 1/4	4 1/8	4	1.00	6	10 7/8	9	6.00
1 1/2	4 5/8	4	1.15	7	12	10	8.25
2	5 3/8	5	1.50	8	13 1/4	10	10.50
2 1/2	6	5	1.90	9	14 3/8	12	15.00
3	6 3/4	6	2.25	10	15 3/4	12	17.25
3 1/2	7 1/2	6	2.70	12	18	14	24.00

### Navy Cast Iron Flange Unions

For 250 Pounds Steam Working Pressure

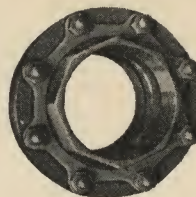


No. 99E

Size In.	Diam. In.	No. of Bolts	Price Each	Size In.	Diam. In.	No. of Bolts	Price Each
3/4	3 1/4	4	\$ .60	4	8	7	\$7.50
1	3 5/8	4	.80	4 1/2	8 3/4	8	8.75
1 1/4	4 1/8	4	1.20	5	9 3/8	8	10.00
1 1/2	4 5/8	4	1.60	6	10 7/8	9	12.50
2	5 3/8	5	2.00	7	12	10	15.00
2 1/2	6	5	3.20	8	13 1/4	10	18.00
3	6 3/4	6	4.80	10	15 3/4	12	28.80
3 1/2	7 1/2	6	6.00	...	...	...	...

Ground joint. Brass to iron seat. No gasket required.

### Kewanee Flange Unions



Rolled in bronze seat ring, giving greatest possible security. All around heavy construction; more bolts on some sizes for increased strength and durability.

Kewanee Flange Unions are rated for 250 pounds working steam pressure, 500 pounds oil, water or gas working pressure at ordinary air temperatures.

Sizes 1 to 4 inches inclusive are tested with compressed air under water; larger sizes are given a 400 pound Hydrostatic test.

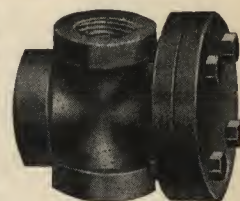
Size Inches	Black Each	Galva- nized Each	Diameter Flange Inches	Bolt No.	Size Bolts Inches	Length Over All Inches
1	\$1.60	\$2.20	4	4	7/16	27/8
1 1/4	2.40	3.20	4 5/8	4	1/2	3 1/8
1 1/2	3.20	4.30	5	4	1/2	3 1/4
2	4.00	5.40	5 1/2	5	1/2	3 3/16
2 1/2	6.40	8.60	6 3/8	4	5/8	3 15/16
3	9.60	13.00	7 1/2	5	5/8	4 3/8
3 1/2	12.00	16.20	8 1/8	6	5/8	4 5/8
4	15.00	20.30	8 3/4	7	5/8	4 7/8
5	20.00	27.00	10 1/4	6	3/4	5 3/8
6	25.00	33.80	11 3/8	8	3/4	5 7/8
8	36.00	48.60	13 7/8	8	7/8	6 3/4
10	57.00	77.80	16 3/8	12	7/8	7 1/4
12	92.00	124.00	18 3/4	14	7/8	7 15/16

### Blow-Off Crosses

The utility and convenience of this special fitting for feeding and blowing-off boilers will recommend it. It is most conveniently placed in the position shown in the illustration. The large openings on the run are of the same size.

The reduced openings are usually of one size, but can be made to suit requirements. The reduced top inlet is used for feeding the boiler.

To the lower reduced outlet the blow-off valve or cock is connected. The blind flange is removable for cleaning out purposes.



Standard

#### Standard

For 125 Pounds Steam Working Pressure

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
2 1/2 x 1 1/2	\$9.00	3 x 2	\$10.00	5 x 3	\$18.00
2 1/2 x 2	9.00	4 x 2	12.00	6 x 2 1/2	27.00
2 1/2 x 2 1/2	9.00	4 x 2 1/2	12.00	6 x 3	27.00
3 x 1 1/2	10.00	5 x 2 1/2	18.00	.....	.....

#### Extra Heavy

For 250 Pounds Steam Working Pressure

Size Inches	Price Each	Size Inches	Price Each
2 1/2 x 2 1/2	\$12.00	4 x 2	\$16.00
3 x 2	13.50	4 x 2 1/2	16.00

### Cast Iron Floor Flanges

Not Faced, Countersunk Holes for Screws



No. 340

Size Inches	Price Each	Size Inches	Price Each
3/4 x 3	\$ .10	1 1/4 x 4	\$ .16
1/2 x 3 1/2	.15	1 1/2 x 4 1/2	.22
3/4 x 3 1/2	.15	2 x 5 1/2	.35
1 x 4	.16	.....	...

Drilled for screw. Galvanized take double the list.



**Cast Iron Long Sweep Fittings**For Working Pressures: 125 Pounds Steam;  
150 Pounds Water**No. 1 Elbows**

Size Inches	Black Price, Each	Size Inches	Black Price, Each
3/4	\$ .26	4 1/2	\$5.50
1	.32	5	6.50
1 1/4	.40	6	8.75
1 1/2	.55	7	13.00
2	.80	8	17.00
2 1/2	1.20	9	25.50
3	2.25	10	30.00
3 1/2	3.25	12	40.00
4	3.50	.....	.....

For prices of reducing sizes, bushed in sand, add 50 per cent to those above. For galvanized fittings, double list given above.

**No. 2 Elbows**

Size Inches	Black Price, Each	Size Inches	Black Price, Each
1	\$ .64	4 1/2	\$11.00
1 1/4	.80	5	13.00
1 1/2	1.10	6	17.50
2	1.60	7	26.00
2 1/2	2.40	8	34.00
3	4.50	9	51.00
3 1/2	6.50	10	60.00
4	7.00	12	80.00

For prices of reducing sizes, bushed in sand, add 50 per cent to those above. For galvanized fittings double list given above.

**No. 3 Tees**

Size Inches	Black Price, Each	Size Inches	Black Price, Each
1	\$ .48	4 1/2	\$8.25
1 1/4	.60	5	9.75
1 1/2	.82	6	13.25
2	1.20	7	19.50
2 1/2	1.80	8	25.50
3	3.40	9	38.00
3 1/2	4.90	10	45.00
4	5.25	12	60.00

For prices of reducing sizes, bushed in sand, add 50 per cent to those above. For galvanized fittings double list given above.

**No. 5 Tees**

Size Inches	Black Price, Each	Size Inches	Black Price, Each
1	\$ .64	4 1/2	\$11.00
1 1/4	.80	5	13.00
1 1/2	1.10	6	17.50
2	1.60	7	26.00
2 1/2	2.40	8	34.00
3	4.50	9	51.00
3 1/2	6.50	10	60.00
4	7.00	12	80.00

For prices of reducing sizes, bushed in sand, add 50 per cent to those above. For galvanized fittings double list given above.

**No. 4 Crosses**

Size Inches	Black Price, Each	Size Inches	Black Price, Each
1	\$ .85	4 1/2	.....
1 1/4	1.10	5	\$17.50
1 1/2	1.50	6	24.00
2	2.15	7	35.00
2 1/2	3.20	8	45.00
3	6.00	9	68.00
3 1/2	8.75	10	80.00
4	9.50	12	107.00

For prices of reducing sizes, bushed in sand, add 50 per cent. For galvanized fittings, double list given above.

**Extra Heavy Cast Iron Fittings**

For 250 Pounds Steam Working Pressure

**Elbows**

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2	\$ .25	4 1/2	\$4.25	1 1/2	1.25	10	28.00
3/4	.30	5	5.50	2	.75	9	25.00
1	.35	6	8.00	2 1/2	1.55	12	40.00
1 1/4	.45	7	12.00	3	2.00	14	110.00
1 1/2	.60	8	17.00	3 1/2	2.75	16	150.00
2	.75	9	25.00	4	3.50		



No. 400

**45° Elbows**

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2	\$ .35	2 1/2	\$1.50	6	\$9.75
3/4	.40	3	2.50	7	14.50
1	.44	3 1/2	3.50	8	21.00
1 1/4	.55	4	4.50	9	31.00
1 1/2	.70	4 1/2	5.50	10	34.00
2	.90	5	6.75	12	48.00



No. 401

**Tees**

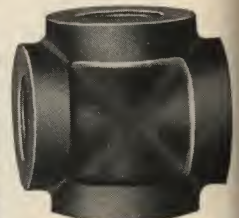
Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1	\$ .55	5	\$8.25	10	42.00	16	200.00
1 1/4	.70	6	12.00	12	60.00		
1 1/2	.90	7	18.00	14	150.00		
2	1.15	8	25.00	16	220.00		
2 1/2	1.80	9	35.00				
3	3.00	10	42.00				
3 1/2	4.25	12	60.00				
4	5.50	14	150.00				
4 1/2	6.75	16	200.00				



No. 402

**Crosses**

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2	\$ .60	4	\$7.00	10	56.00	12	80.00
3/4	.65	5	8.50	12	70.00		
1	.70	6	11.00				
1 1/4	.90	7	16.00				
1 1/2	1.20	8	24.00				
2	1.50	9	34.00				
2 1/2	2.50	10	48.00				
3	4.00	12	60.00				
3 1/2	5.50		80.00				



No. 403

**Y Branches**

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2	\$ .90	4	\$11.00	10	84.00	12	120.00
3/4	1.10	5	16.50	12	105.00		
1	1.10	6	24.00				
1 1/4	1.35	7	36.00				
1 1/2	1.80	8	50.00				
2	2.25	9	72.00				
2 1/2	3.75	10	84.00				
3	6.00	12	120.00				
3 1/2	8.25		150.00				



No. 404

**Reducers**

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/2	\$ .28	2	\$ .83	4 1/2	\$4.68	9	\$27.50
3/4	.33	2 1/2	1.38	5	6.00	10	31.00
1	.39	3	2.20	6	8.80	12	44.00
1 1/4	.50	3 1/2	3.05	7	13.20		
1 1/2	.66	4	3.85	8	18.75		

**Plugs**

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/2	\$ .04	2	\$ .15	4 1/2	\$1.00	9	\$5.00
3/4	.06	2 1/2	.27	5	1.35	10	5.75
1	.08	3	.38	6	1.80	12	7.50
1 1/4	.09	3 1/2	.57	7	2.80		
1 1/2	.11	4	.63	8	4.15		

For galvanized extra heavy fittings, double above lists.



## 90° Malleable Elbows



No. 101

## Straight

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
1/8	\$ .05	\$ .07	2	\$ .40	\$ .52
1/4	.05	.07	2 1/2	.72	.95
3/8	.06	.08	3	1.00	1.30
1/2	.07	.09	3 1/2	1.50	1.95
3/4	.10	.13	4	1.80	2.35
1	.13	.17	5	3.25	4.25
1 1/4	.20	.26	6	4.65	6.05
1 1/2	.25	.33	...	...	...

## Reducing

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
1/4	\$ .06	\$ .08	1 1/4	\$ .22	\$ .29	3 1/2	\$ 1.65	\$ 2.15
3/8	.07	.09	1 1/2	.28	.36	4	2.00	2.60
1/2	.08	.10	2	.44	.57	6	5.15	6.70
3/4	.11	.14	2 1/2	.80	1.05	...	...	...
1	.14	.18	3	1.10	1.45	...	...	...

## Right and Left

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
1/4	\$ .06	\$ .08	3/4	\$ .12	\$ .16	1 1/2	\$ .29	\$ .38
3/8	.07	.09	1	.15	.20	2	.46	.60
1/2	.08	.10	1 1/4	.23	.30	...	...	...

## 45° Malleable Elbows

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
1/8	\$ .06	\$ .08	2	\$ .48	\$ .62
1/4	.06	.08	2 1/2	.86	1.10
3/8	.07	.09	3	1.20	1.55
1/2	.09	.12	3 1/2	1.80	2.35
3/4	.12	.16	4	2.20	2.85
1	.16	.21	5	3.90	5.10
1 1/4	.24	.31	6	5.60	7.30
1 1/2	.30	.39	...	...	...



No. 102

## 90° Malleable Street Elbows

## Straight

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
1/8	\$ .06	\$ .08	2	\$ .46	\$ .60
1/4	.06	.08	2 1/2	.83	1.10
3/8	.07	.09	3	1.15	1.50
1/2	.08	.10	3 1/2	1.80	2.35
3/4	.12	.16	4	2.10	2.75
1	.15	.20	5	3.75	...
1 1/4	.23	.30	6	5.35	...
1 1/2	.29	.38	...	...	...



No. 103

## Reducing

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
3/4	\$ .13	\$ .17	1 1/2	\$ .32	\$ .42	3	\$ 1.30	\$ 1.70
1	.17	.22	2	.51	.66	...	...	...
1 1/4	.25	.33	2 1/2	.92	1.20	...	...	...

## 45° Malleable Street Elbows

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
1/4	\$ .07	\$ .09	1 1/4	\$ .28	\$ .36
3/8	.08	.10	1 1/2	.35	.46
1/2	.10	.13	2	.55	.72
3/4	.14	.18	3	1.40	1.85
1	.18	.23	4	2.55	3.30



No. 104

## 60° Malleable Elbows

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
1/4	\$ .31	\$ .40	2	\$ .62	\$ .80
1 1/2	.40	.52	...	...	...

## Malleable Side Outlet Elbows



No. 105

Size In.	STRAIGHT, EACH Black	STRAIGHT, EACH Galv.	REDUCING, EACH Black	REDUCING, EACH Galv.
3/8	\$ .12	\$ .16	\$ .14	\$ .18
1/2	.14	.18	.16	.21
3/4	.20	.26	.22	.29
1	.26	.34	.28	.36
1 1/4	.40	.52	.44	.57
1 1/2	.50	.65	...	...
2	.80	1.05	...	...

## Malleable Drop Elbows

## Female

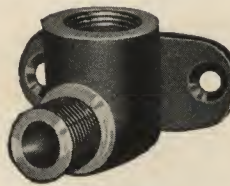
Size In.	STRAIGHT, EACH Black	STRAIGHT, EACH Galv.	REDUCING, EACH Black	REDUCING, EACH Galv.
1/4	\$ .07	\$ .09	...	...
3/8	.08	.11	\$ .09	...
1/2	.12	.16	...	...
3/4	.18	.23	.20	\$ .26



No. 106

## Malleable Drop Elbows

## Male and Female



No. 107

Size In.	STRAIGHT, EACH Black	STRAIGHT, EACH Galv.	REDUCING, EACH Black	REDUCING, EACH Galv.
3/8	\$ .08	\$ .11	\$ .09	\$ .12
1/2	.12	.16	.13	.17
3/8	\$ .10	\$ .13	\$ .11	\$ .14
1/2	.15	.20	.17	.22

## Male and Female, Long

## Malleable Tees



No. 110, Straight



No. 111, Reducing

Size In.	STRAIGHT, EACH Black	STRAIGHT, EACH Galv.	REDUCING, EACH Black	REDUCING, EACH Galv.	Size In.	STRAIGHT, EACH Black	STRAIGHT, EACH Galv.	REDUCING, EACH Black	REDUCING, EACH Galv.
1/8	\$ .07	\$ .09	...	...	2	\$ .52	\$ .68	\$ .57	\$ .75
1/4	.07	.09	\$ .08	\$ .10	2 1/2	.90	1.20	1.00	1.30
3/8	.08	.10	.09	.12	3	1.30	1.70	1.45	1.90
1/2	.10	.13	.11	.14	3 1/2	2.00	2.60	2.20	2.85
3/4	.13	.17	.15	.20	4	2.40	3.10	2.65	3.45
1	.17	.22	.19	.25	5	4.25	5.55	4.70	6.10
1 1/4	.26	.34	.29	.38	6	6.00	7.80	6.60	8.60
1 1/2	.33	.43	.37	.48	...	...	...	...	...

## Malleable Service Tees

## Straight

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
1/4	\$ .08	...	1 1/4	\$ .30	\$ .39
3/8	.09	\$ .12	1 1/2	.38	.50
1/2	.12	.16	2	.60	.78
3/4	.15	.20	2 1/2	1.05	...
1	.20	.26	3	1.50	...



No. 115

## Reducing

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
3/4	\$ .17	...	1 1/2	\$ .42	\$ .55	3	\$ 1.65	...
1	.22	\$ .29	2	.66	.86	4	3.05	...
1 1/4	.33	.43	2 1/2	1.15	...	...	...	...

## Malleable 4-Way Tees



No. 112

Size In.	Black	EACH Galv.	Size In.	Black	EACH Galv.
3/8	\$ .16	\$ .21	1 1/4	\$ .52	\$ .68
1/2	.20	.26	1 1/2	.66	.86
3/4	.26	.34	2	1.05	1.35
1	.34	.44	...	...	...



## Malleable Drop Tees

## Female



No. 113, Female

Size In.	STRAIGHT EACH		REDUCING EACH	
	Black	Galv.	Black	Galv.
3/8	\$ .10	\$ .13	\$ .11	...
1/2	.15	.20	.17	\$.22
3/4	.22	.28	.24	.31
1	...	...	.32	...

## Male and Female

Size In.	STRAIGHT EACH		REDUCING EACH	
	Black	Galv.	Black	Galv.
3/8	\$ .10	\$ .13	\$ .11	...
1/2	...	...	.17	\$.22
3/4	...	...	.24	.31
1	...	...	.32	...

## Male and Female, Long

Size In.	STRAIGHT EACH		REDUCING EACH	
	Black	Galv.	Black	Galv.
3/8	\$ .12	\$ .16	...	...
3/4	...	...	\$.29	...
1	...	...	.40	...
1 1/4	...	...	.65	...

## Malleable Crosses

## Straight



No. 116

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
1/8	\$ .09	...	2	\$ .70	\$ .90
1/4	.09	\$.12	2 1/2	1.25	1.65
3/8	.11	.14	3	1.75	2.30
1/2	.13	.17	3 1/2	2.65	3.45
3/4	.18	.23	4	3.15	4.10
1	.23	.30	5	5.70	7.40
1 1/4	.35	.46	6	8.15	10.60
1 1/2	.44	.57	...	...	...

## Reducing

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
1/4	\$ .10	...	1	\$ .25	\$ .33
3/8	.12	...	1 1/4	.38	.50
1/2	.14	\$.18	1 1/2	.48	.62
3/4	.20	.26	2	.77	1.00
...	...	...	2 1/2	\$1.40	\$1.85
...	...	...	3	1.95	2.55
...	...	...	4	3.45	4.50

## 45° Malleable Y Bends

## Straight

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
3/8	\$ .10	...	1 1/2	\$ .57	\$ .75
1/2	.14	\$.18	2	.85	1.10
3/4	.18	.23	2 1/2	1.55	2.00
1	.25	.33	3	2.80	3.65
1 1/4	.40	.52	4	4.80	6.25

## Reducing

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
1	\$ .28	...	1 1/2	\$ .63	\$ .82
1 1/4	.44	...	2	.95	1.25
...	...	...	2 1/2	\$1.70	\$2.20
...	...	...	3	3.10	4.05

## 60° Malleable Y Bends

Size In.	STRAIGHT, EACH		REDUCING, EACH	
	Black	Galv.	Black	Galv.
2	\$1.00	\$1.30	\$1.10	\$1.45

## Malleable Caps



No. 125

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
1/8	\$ .03	\$ .04	2	\$ .25	\$ .33
1/4	.03	.04	2 1/2	.40	.52
3/8	.04	.05	3	.60	.78
1/2	.05	.07	3 1/2	.80	1.05
3/4	.08	.10	4	1.10	1.45
1	.10	.13	5	1.80	2.35
1 1/4	.13	.17	6	2.70	3.50
1 1/2	.18	.23	...	...	...

## Close Pattern Malleable Return Bends



No. 131

Will not make up parallel coils, as distance, center to center, of two adjacent bends is greater than center to center distance between openings of a single bend.

Size Inches	RIGHT-HAND EACH		RIGHT AND LEFT EACH		Center to Center Inches
	Black	Galv.	Black	Galv.	
1/2	\$ .16	\$ .21	\$ .18	\$ .23	1
3/4	.18	.23	.21	.27	1 1/4
1	.24	.31	.28	.36	1 1/2
1 1/4	.36	.47	.42	.55	1 3/4
1 1/2	.49	.64	.56	.73	2 5/16
2	.80	1.05	.92	1.20	2 5/8

## Medium Pattern Malleable Return Bends



No. 132

Size Inches	RIGHT-HAND EACH		RIGHT AND LEFT EACH		Center to Center Inches
	Black	Galv.	Black	Galv.	
1/2	\$ .17	\$ .22	\$ .19	...	1 1/4
3/4	.20	.26	.23	\$.30	1 1/2
1	.26	.34	.30	.39	1 7/8
1 1/4	.40	.52	.46	...	2 1/4
1 1/2	.55	.72	.63	...	2 1/2
2	.88	1.15	1.00	...	3

## Open Pattern Malleable Return Bends



No. 133

Size Inches	RIGHT-HAND EACH		RIGHT AND LEFT EACH		Center to Center Inches
	Black	Galv.	Black	Galv.	
1/2	\$ .19	\$ .25	\$ .22	...	1 1/2
3/4	.22	.29	.26	\$.34	2
1	.29	.38	.34	.44	2 1/2
1 1/4	.44	.57	.51	.66	3
1 1/2	.62	.80	.70	.90	3 1/2
2	1.00	1.30	1.15	1.50	4
2 1/2	1.45	1.90	1.65	...	4 1/2
3	2.15	2.80	2.45	...	5

## Malleable Cross Overs



No. 138

Size Inches	PRICE, EACH	
	Black	Galvanized
1/2	\$ .20	\$ .25
3/4	.30	.40
1	.45	.60

## Malleable Reducers



No. 123

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
1/4	\$ .05	\$ .07	1 1/2	\$ .18	\$ .23
3/8	.05	.07	2	.28	.36
1/2	.06	.08	2 1/2	.50	.65
3/4	.09	.12	3	.75	1.00
1	.12	.16	3 1/2	1.10	1.45
1 1/4	.15	.20	4	1.40	1.85



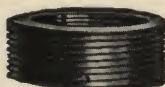
## Malleable Shoulder Bushings



Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
1/4	\$.04	\$.08	1 1/4	\$.07	\$.14
3/8	.04	.08	1 1/2	.09	.18
1/2	.04	.08	2	.14	.28
3/4	.05	.10	2 1/2	.21	.42
1	.06	.12			

## Malleable Faced Bushings

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
3/8	\$.08	\$.12	3 1/2	\$1.20	\$1.80
1/2	.09	.14	4	1.50	2.25
3/4	.11	.17	4 1/2	2.10	3.15
1	.13	.20	5	2.60	3.90
1 1/4	.17	.25	6	3.75	5.60
1 1/2	.22	.33	7	8.00	....
2	.32	.48	8	9.00	....
2 1/2	.48	.72	10	14.00	....
3	.70	1.05	12	20.00	....



Malleable Bushings Reduce One Size Only  
No. 136

## Malleable Locknuts

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
1/8	\$.02	....	1	\$.06	\$.08
1/4	.02 1/2	\$.03 1/2	1 1/4	.08	.10
3/8	.02 1/2	.03 1/2	1 1/2	.10	.13
1/2	.03	.04	2	.12	.16
3/4	.04	.05	....	....	....



No. 127

## Malleable Waste Nuts

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
1/4	\$.03	\$.04	1	\$.06	\$.08
3/8	.04	.05	1 1/4	.11	.14
1/2	.04	.05	1 1/2	.25	.33
3/4	.05	.07	....	....	....



No. 126

## Malleable R &amp; L Hexagon Nipples



No. 137

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/4	\$.20	1	\$.30	2 1/2	\$1.10
3/8	.20	1 1/4	.40	3	1.50
1/2	.20	1 1/2	.50	3 1/2	1.90
3/4	.25	2	.70	4	2.40

Right-hand at special prices.

## Malleable Extension Pieces



No. 128

Size In.	EACH		Size In.	EACH	
	Black	Galv.		Black	Galv.
3/8	\$.05	\$.07	1 1/4	\$.18	....
1/2	.07	.09	1 1/2	.23	....
3/4	.11	.14	2	.33	....
1	.16	....	....	....	....

## Malleable Wall Plates

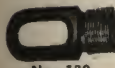
Size Inches	Black Each
3/8	\$.14
1/2	.18

Size Inches	Black Each
3/4	\$.28
....	....



No. 129

## Malleable Chandelier Loops Male



No. 130

Size Inches	Black Each	Size Inches	Black Each
3/8	\$.07	1/2	\$.09

## Malleable Chandelier Hooks Male or Female

Size Inches	Black Each
3/8	\$.07

Size Inches	Black Each
1/2	\$.09



No. 162

## Malleable Right and Left-Hand Couplings

Size In.	EACH		Size Inches	EACH	
	Black	Galv.		Black	Galv.
1/4	\$.05	\$.07	1 1/4	\$.16	\$.21
3/8	.05	.07	1 1/2	.21	.27
1/2	.06	.08	2	.34	.44
3/4	.09	.12	2 1/2	.60	.78
1	.12	.16	3	.85	1.10



No. 122

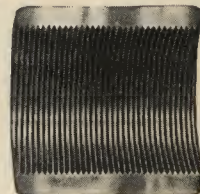
## Malleable Right-Hand Couplings

Size Inches	EACH		Size Inches	EACH	
	Black	Galv.		Black	Galv.
1/4	\$.05	\$.07	1 1/2	\$.21	\$.27
3/8	.05	.07	2	.34	.44
1/2	.06	.08	2 1/2	.60	.78
3/4	.09	.12	3	.85	1.10
1	.12	.16	3 1/2	1.25	1.60
1 1/4	.16	.21	4	1.50	1.95

## Wrought Iron Couplings



No. 714, Standard



No. 715, Extra Heavy

## Standard Couplings

Size Pipe Inches	Nominal O. D. Inches	Length Inches	PRICE, EACH		R. & L. Black
			Black	Galv.	
1/8	19/32	15/16	\$.05	\$.06	....
1/4	3/4	1 1/8	.05	.06	\$.07
3/8	29/32	1 5/8	.06	.08	.08
1/2	1 1/8	1 5/8	.07	.10	.11
3/4	1 11/32	1 9/8	.10	.13	.15
1	1 5/8	1 9/8	.13	.18	.20
1 1/4	1 31/32	2 1/8	.17	.25	.25
1 1/2	2 13/64	2 5/8	.21	.32	.30
2	2 23/32	2 9/8	.28	.40	.50
2 1/2	3 5/16	2 7/8	.40	.55	.85
3	3 1/2	3 1/8	.60	.80	1.20
3 1/2	4 1/8	3 7/8	.80	1.05	1.60
4	4 5/8	3 7/8	1.00	1.40	2.00
4 1/2	5 1/8	3 5/8	1.50	2.00	....
5	6 1/4	4 1/8	1.65	2.25	....
6	7 3/8	4 1/8	2.40	3.25	....
7	8 3/8	4 1/8	3.25	....	....
8	9 1/4	4 5/8	4.25	....	....
9	10 5/16	5 1/8	5.50	....	....
10	11 5/8	6 1/8	7.50	....	....
12	13 7/8	6 1/8	10.00	....	....

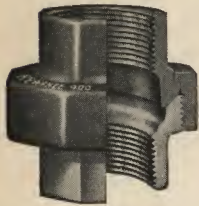
## Extra Heavy Couplings

Size	Black	Galv.	Size	Black	Galv.
3/8	.95	1.12	1 1/2	2.00	2.25
1/2	1.13	1 7/8	2	2.25	2.50
3/4	1.44	2 1/8	2 1/2	2.50	2.75
1	1.63	2 3/8	3	2.75	3.00
1 1/4	2.07	2 5/8	3 1/2	3.00	3.25
1 1/2	2.31	2 7/8	4	3.25	3.50
2	2.81	3 1/8	4 1/2	3.50	3.75
2 1/2	3.31	3 1/2	5	3.75	4.00
3	4.00	3 3/4	6	4.00	4.25
3 1/2	4.63	4 1/4	7	4.25	4.50
4	5.13	4 1/2	8	4.50	4.75

## Hydraulic Recessed Couplings

Size	Black	Galv.	Size	Black	Galv.
3/8	.95	1.12	1 1/2	2.00	2.25
1/2	1.13	1 7/8	2	2.25	2.50
3/4	1.44	2 1/8	2 1/2	2.50	2.75
1	1.63	2 3/8	3	2.75	3.00
1 1/4	2.07	2 5/8	3 1/2	3.00	3.25
1 1/2	2.31	2 7/8	4	3.25	3.50
2	2.81	3 1/8	4 1/2	3.50	3.75
2 1/2	3.31	3 1/2	5	3.75	4.00
3	4.00	3 3/4	6	4.00	4.25
3 1/2	4.63	4 1/4	7	4.25	4.50
4	5.13	4 1/2	8	4.50	4.75



**Walworth Kewanee Unions****Kewanee 400 Unions**  
With Forged Steel Rings

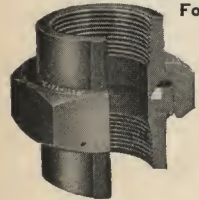
Forged manganese bronze to forged steel ball joint. No gaskets required. Forged steel ring, non-corrosive thread connection; sizes from 1/8 to 3 inches rated for 400 pounds working steam pressure at ordinary air temperatures and 2000 pounds at working pressure cold oil, water or gas, non-shock.

Size In.	Black Each	Galv. Each	Size In.	Black Each	Galv. Each
1/8	\$ .30	\$ .45	1 1/4	\$1.20	\$1.80
1/4	.30	.45	1 1/2	1.60	2.40
3/8	.40	.60	2	2.00	3.00
1/2	.50	.75	2 1/2	3.20	4.80
3/4	.60	.90	3	4.80	7.20
1	.80	1.20	...	.....	.....

**Kewanee Unions**  
With Malleable Ring

Kewanee unions in sizes 3 1/2 and 4 inches have malleable iron rings, cast bronze thread ends and are rated for 200 pounds working steam pressure; 500 pounds oil, water or gas, non-shock.

Size	3 1/2	4
Kewanee Unions, Black.....each	\$6.50	\$9.75
Kewanee Unions, Galvanized.....each	10.00	15.00

**Catawissa Forged Steel Unions**For Working Pressures: Standard, 500 Pounds  
Steam or 2000 Pounds Cold;  
Extra Heavy, 6000 Pounds Cold

With bronze or steel seats for water, air or gas lines and most ordinary purposes; steel seats for use with ammonia, hot gases, high pressures or super-heated steam; stainless steel seats for use with alkalis, most acids, high temperatures and corrosive action of gases and super-heated steam.

Size In.	EACH		Size In.	EACH	
	STD. BRONZE OR STEEL SEATS Black	EX. HEAVY and Stainless Steel Seat Black		STD. BRONZE OR STEEL SEATS Black	EX. HEAVY and Stainless Steel Seat Black
1/8	\$ .30	\$ .45	1 1/4	\$1.20	\$1.80
1/4	.30	.45	1 1/2	1.60	2.40
3/8	.40	.60	2	2.00	3.00
1/2	.50	.75	2 1/2	4.50	6.00
3/4	.60	.90	3	6.75	9.00
1	.80	1.20	...	.....	.....

**Wrought Iron Long Screws**

Furnished with coupling and locknut faced. Long screws, longer than standard, furnished on special order and charged as cut pipe, with threads, couplings and locknuts extra.

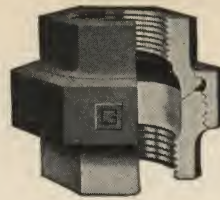
Size Pipe Inches	Standard Length In.	PRICE, EACH Black	PRICE, EACH Galv.	Size Pipe Inches	Standard Length In.	PRICE, EACH Black	PRICE, EACH Galv.
1/4	2 1/2	\$ .30	\$ .35	1 1/2	5 1/2	\$1.30	\$1.60
3/8	3	.35	.40	2	6	1.70	2.10
1/2	3 1/2	.40	.50	2 1/2	7	2.70	3.10
3/4	4	.55	.66	3	8	3.70	4.70
1	4 1/2	.75	1.00	3 1/2	8 1/2	5.40	6.50
1 1/4	5	1.00	1.25	4	9	6.60	7.75

In ordering, specify length of thread wanted.

We are in position to supply many items not shown in this catalogue and shall be pleased to receive your inquiries.

**Grabler Malleable Iron Unions**

For 125 Pounds Working Pressure

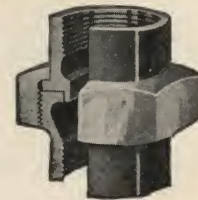


Ground joint. Brass to iron. No inserted parts.

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Black	Galv.		Black	Galv.
1/8	\$ .30	\$ .45	1 1/4	\$1.20	\$1.80
1/4	.30	.45	1 1/2	1.60	2.40
3/8	.40	.60	2	2.00	3.00
1/2	.50	.75	2 1/2	3.20	4.80
3/4	.60	.90	3	4.80	6.20
1	.80	1.20	...	.....	.....

**Standard Malleable Iron Unions**

For 150 Pounds Steam Working Pressure



No. 156

Size In.	PRICE, EACH Black	PRICE, EACH Galv.	Size In.	PRICE, EACH Black	PRICE, EACH Galv.
1/8	\$ .18	\$ .27	1	\$ .33	\$ .50
1/4	.18	.27	1 1/4	.46	.70
3/8	.20	.30	1 1/2	.58	.90
1/2	.22	.33	2	.75	1.15
3/4	.27	.40	2 1/2	1.55	2.35
			3	2.10	3.15
			3 1/2	3.65	5.50
			4	4.35	6.50
			...	.....	.....

**No. 7401 Walco Malleable Iron Unions**For 250 Pounds Steam Working Pressure  
Brass to Iron Seat

A high grade union, malleable iron throughout with a tensile strength of about 42000 pounds per square inch.

A brass seat ring is forced into a recess in the iron end of the union under high pressure making the brass practically integral with the iron.

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Black	Galvanized		Black	Galvanized
1/4	\$ .30	\$ .45	1 1/4	\$1.20	\$1.80
3/8	.40	.60	1 1/2	1.60	2.40
1/2	.50	.75	2	2.00	3.00
3/4	.60	.90	2 1/2	3.20	4.80
1	.80	1.20	3	4.80	7.20

**No. 519 1/2 Malleable Iron Railroad Unions**

Brass to Iron Seat Unions

Malleable Ends, Malleable Octagon Ring

For Steam Working Pressures Up to 200 Pounds  
Tested to 250 Pounds Hydraulic Pressure

The brass seat ring is forced into place by special machinery and cannot loosen.

The seats are ground in, so that a tight joint is obtained. The brass to iron seat eliminates the use of gaskets.



Size In.	PRICE, EACH Black	PRICE, EACH Galv.	Size In.	PRICE, EACH Black	PRICE, EACH Galv.
1/4	\$ .38	\$ .53	1 1/4	\$1.50	\$2.10
3/8	.50	.70	1 1/2	2.00	2.80
1/2	.62	.87	2	2.50	3.50
3/4	.75	1.05	2 1/2	4.00	5.60
1	1.00	1.40	3	6.00	8.40



**Malleable Iron Railroad Union Fittings**

Brass to Iron Seat

For 200 and 250 Pounds Steam Working Pressure

**No. 590 Elbows with Female Union**

Size In.	PRICE, EACH	
	Black	Galv.
1/4	\$ .45	\$ .60
3/8	.60	.80
1/2	.75	1.00
3/4	.90	1.20
1	1.20	1.60
1 1/4	1.80	2.40
1 1/2	2.40	3.20
2	3.00	4.00
2 1/2	4.80	6.40

**No. 592 Elbows with Male Union**

Size In.	PRICE, EACH	
	Black	Galv.
1/4	\$ .45	\$ .60
3/8	.60	.80
1/2	.75	1.00
3/4	.90	1.20
1	1.20	1.60
1 1/4	1.80	2.40
1 1/2	2.40	3.20
2	3.00	4.00
2 1/2	4.80	6.40

**No. 594 Tees with Female Union**

Size In.	PRICE, EACH	
	Black	Galv.
1/4	\$ .50	\$ .67
3/8	.66	.88
1/2	.82	1.10
3/4	1.00	1.32
1	1.32	1.75
1 1/4	1.98	2.65
1 1/2	2.64	3.50
2	3.30	4.40
2 1/2	5.30	7.10

**No. 596 Tees with Male Union**

Size In.	PRICE, EACH	
	Black	Galv.
1/4	\$ .50	\$ .67
3/8	.66	.88
1/2	.82	1.10
3/4	1.00	1.32
1	1.32	1.75
1 1/4	1.98	2.65
1 1/2	2.64	3.50
2	3.30	4.40
2 1/2	5.30	7.10

In Ordering Specify if for  
200 or 250 Pounds Pressure**Malleable Iron Female Union Elbows**

Size Inches	PRICE, EACH	
	Black	Galv.
1/4	\$ .38	\$ .57
3/8	.40	.60
1/2	.42	.63
3/4	.54	.81
1	.63	.95



No. 150

**Malleable Iron Male Union Elbows**

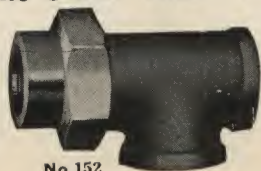
Size In.	PRICE, EACH	
	Black	Galv.
1/4	\$ .43	\$ .65
3/8	.45	.70
1/2	.48	.72
3/4	.62	.93
1	.72	1.08



No. 161

**Malleable Iron Female Union Tees**

Size In.	PRICE, EACH	
	Black	Galv.
1/4	\$ .40	\$ .60
3/8	.43	.65
1/2	.45	.68
3/4	.57	.86
1	.70	1.05



No. 152

**Malleable Iron Male Union Tees**

Size In.	PRICE, EACH	
	Black	Galv.
1/4	\$ .48	\$ .72
3/8	.50	.75
1/2	.52	.78
3/4	.65	1.00
1	.80	1.20

**Brass Steam Swing Joints**

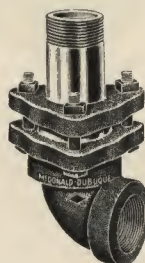
For 125 Pounds Steam Working Pressure

Size Inches	PRICE, EACH	
	Rough	Finished
1/4	\$1.90	\$2.40
3/8	2.20	2.70
1/2	2.50	3.00
3/4	3.50	4.00
1	5.00	5.75
1 1/4	6.50	7.25
1 1/2	9.00	10.00
2	13.00	15.00
2 1/2	22.00	24.50
3	30.00	33.00

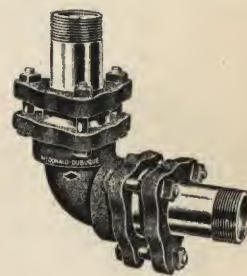


No. 728

Finished brass steam swing joints are furnished made to order only.

**McDonald Swing Joints**

Single



Double

McDonald Swing Joints are universally used wherever flexible joints in pipe lines are required, particularly in petroleum lines. They give free rotary motion without leakage.

These Swing Joints are of heavy durable construction—having cast iron body and cast brass ferrules. Ferrules are threaded with standard iron pipe thread. Specially treated strand packing prevents any leakage through stuffing box.

Size Inches	PRICE, EACH	
	Single	Double
1 1/4	\$3.75	\$6.50
1 1/2	4.00	7.00
2	4.75	8.50
2 1/2	7.00	11.00
3	10.00	15.00

**McDonald All-brass Curb Pump Swing Joints**

Made in various patterns in 3/4, 1 and 1 1/4-inch iron pipe thread sizes.

Prices upon application.

We are as near as your  
nearest telephone.



## Malleable Iron Railing Fittings

No. 1 Elbows						
Size Inches	EACH		Size Inches	EACH		
	Black	Galv.		Black	Galv.	
	1/2	\$.10	\$.13	2	\$.44	\$.57
	3/4	.12	.15	2 1/2	1.00	1.30
	1	.14	.18	3	2.00	2.60
1 1/4	.22	.29	4	3.75	4.90	
1 1/2	.30	.39	...	...	...	

No. 2 Side Outlet Elbows						
Size Inches	EACH		Size Inches	EACH		
	Black	Galv.		Black	Galv.	
	1/2	\$.19	\$.25	2	\$.88	\$1.15
	3/4	.23	.30	2 1/2	2.00	2.60
	1	.28	.36	3	3.35	4.35
1 1/4	.44	.57	4	6.10	8.00	
1 1/2	.60	.78	...	...	...	

No. 3 Tees						
Size Inches	EACH		Size Inches	EACH		
	Black	Galv.		Black	Galv.	
	1/2	\$.13	\$.17	2	\$.57	\$.75
	3/4	.16	.21	2 1/2	1.30	1.70
	1	.19	.25	3	2.60	3.40
1 1/4	.28	.36	4	4.90	6.40	
1 1/2	.40	.52	...	...	...	

No. 4 Side Outlet Tees						
Size Inches	EACH		Size Inches	EACH		
	Black	Galv.		Black	Galv.	
	1/2	\$.25	\$.33	2	\$1.15	\$1.50
	3/4	.31	.40	2 1/2	2.60	3.40
	1	.37	.48	3	5.00	6.50
1 1/4	.57	.75	4	8.25	10.75	
1 1/2	.80	1.05	...	...	...	

No. 5 Crosses						
Size Inches	EACH		Size Inches	EACH		
	Black	Galv.		Black	Galv.	
	1/2	\$.18	\$.23	2	\$.77	\$1.00
	3/4	.21	.27	2 1/2	1.75	2.30
	1	.25	.33	3	3.40	4.45
1 1/4	.38	.49	4	6.30	8.20	
1 1/2	.53	.70	...	...	...	

No. 6 Side Outlet Crosses						
Size Inches	EACH		Size Inches	EACH		
	Black	Galv.		Black	Galv.	
	1/2	\$.32	\$.42	2	\$1.45	\$1.90
	3/4	.38	.50	2 1/2	3.15	4.10
	1	.46	.60	3	6.00	7.80
1 1/4	.70	.91	4	10.00	13.00	
1 1/2	1.00	1.30	...	...	...	

No. 7 Square Floor Flanges						
Size Inches	EACH		Size Inches	EACH		
	Black	Galv.		Black	Galv.	
	1/2	\$.12	\$.16	2	\$.80	\$1.05
	3/4	.16	.21	2 1/2	1.55	2.00
	1	.20	.26	3	2.75	3.60
1 1/4	.34	.44	4	5.00	6.50	
1 1/2	.50	.65	...	...	...	

No. 8 Male or Female Acorns						
Size Inches	EACH		Size Inches	EACH		
	Black	Galv.		Black	Galv.	
	1/2	\$.12	\$.16	2	\$.60	\$.78
	3/4	.16	.21	2 1/2	1.25	1.65
	1	.20	.26	3	2.15	2.80
1 1/4	.28	.36	4	4.35	5.65	
1 1/2	.38	.50	...	...	...	

Railing fittings will be furnished tapped as shown in cuts, or right hand on all openings when so specified, at regular prices; tapped otherwise will be charged at 15% additional net.

Fittings reamed for slip joint—prices upon application.

In ordering railing fittings specify number and size.

## Malleable Iron Reducing Railing Fittings

Ball Pattern—For All Purposes

## No. 1 Reducing Elbows

Size Inches	Black Each		Size Inches	Black Each	
	Galv.			Galv.	
1 1/4 x 1	\$.25	\$.32	2 x 1 1/2	\$.51	\$.66
1 1/2 x 1 1/4	.35	.45	2 1/2 x 2	1.15	1.50
2 x 1 1/4	.51	.66	3 x 2 1/2	2.30	3.00

## No. 2 Reducing Side Outlet Elbows

1 1/4 x 1 x 1	\$.51	\$.66	2 x 1 1/2 x 1 1/2	\$1.05	\$1.35
1 1/2 x 1 1/4 x 1 1/4	.70	.90	2 1/2 x 2 x 2	2.30	3.00
2 x 1 1/4 x 1 1/4	1.05	1.35	3 x 2 1/2 x 2 1/2	3.85	5.00

## No. 3 Reducing Tees

1 x 1 x 1 1/4	\$.32	\$.42	2 x 2 x 1 1/4	\$.66	\$.86
1 1/4 x 1 1/4 x 1	.32	.42	2 x 2 x 1 1/2	.66	.86
1 1/4 x 1 1/4 x 1 1/2	.46	.60	2 x 2 x 2 1/2	1.50	1.95
1 1/2 x 1 1/2 x 1 1/4	.46	.60	2 1/2 x 2 1/2 x 2	1.50	1.95
1 1/4 x 1 1/4 x 2	.66	.86	2 1/2 x 2 1/2 x 3	3.00	3.90
1 1/2 x 1 1/2 x 2	.66	.86	3 x 3 x 2 1/2	3.00	3.90

## No. 4 Reducing Side Outlet Tees

1 1/4 x 1 1/4 x 1 x 1	\$.66	\$.86	2 x 2 x 1 1/2 x 1 1/2	\$1.32	\$1.70
1 1/2 x 1 1/2 x 1 1/4 x 1 1/4	.92	1.20	2 1/2 x 2 1/2 x 2 x 2	3.00	3.90
2 x 2 x 1 1/4 x 1 1/4	1.32	1.70	3 x 3 x 2 1/2 x 2 1/2	5.75	7.45

## \*No. 5 Reducing Crosses

1 1/4 x 1 1/4 x 1 x 1	\$.45	.58	2 x 2 x 1 1/2 x 1 1/2	\$.90	\$1.15
1 1/2 x 1 1/2 x 1 1/4 x 1 1/4	.62	.80	2 1/2 x 2 1/2 x 2 x 2	2.05	2.65
2 x 2 x 1 1/4 x 1 1/4	.90	1.15	3 x 3 x 2 1/2 x 2 1/2	3.90	5.05

## No. 6 Reducing Side Outlet Crosses

Size, In.		Black, Ea. Galv. Ea.		Size, In.		Black, Ea. Galv. Ea.	
2	x 2	1 1/2	x 1 1/2	1 1/2	x 1 1/2	\$1.67	\$2.15

\*Reducing crosses are always tapped with one end of large run left hand.

Reducing fittings will always be tapped same as straight sizes, unless otherwise ordered.

## Malleable Iron Hinges for Pipe Railing Gates

Size In.	PRICE, EACH	
	Black	Galv.
1/2	\$.35	\$.49
3/4	.40	.56
1	.45	.63
1 1/4	.55	.77
1 1/2	.80	1.12
2	1.00	1.40

## Malleable Iron Latches for Pipe Railing Gates

Size In.	PRICE, EACH	
	Black	Galv.
1/2	\$.25	\$.35
3/4	.30	.42
1	.35	.49
1 1/4	.40	.56
1 1/2	.45	.63
2	.50	.70

## Pipe Railings



Plain, 2 Sections, 2 Rail Railing

Customers are invited to submit sketch or blue print showing any arrangement of railing desired, and we shall be pleased to quote prices on all material ready for erection.



Adjustable Malleable Iron Railing  
Fittings

## No. 70 Elbows



Size Inches	Price Each	Size Inches	Price Each
1	\$1.10	1½	\$1.70
1¼	1.25	2	2.25

## No. 70½ Special Elbows

Size Inches	Price Each
1	\$.80
1¼	.90

Size Inches	Price Each
1½	\$1.20
2	1.65



## No. 71 Tees



Size Inches	Price Each	Size Inches	Price Each
1	\$1.30	1½	\$2.00
1¼	1.50	2	2.50

## No. 72 Stair Tees

Size Inches	Price Each
1	\$1.30
1¼	1.60

Size Inches	Price Each
1½	\$2.15
2	2.50



## No. 73 Crosses



Size Inches	Price Each	Size Inches	Price Each
1	\$1.50	1½	\$2.35
1¼	1.75	2	2.75

## No. 74 Stair Crosses

Size Inches	Price Each
1	\$1.50
1¼	1.85

Size Inches	Price Each
1½	\$2.50
2	2.75



## No. 75 Stair Landing Tees



Size Inches	Price Each	Size Inches	Price Each
1	\$.90	1½	\$1.50
1¼	1.10	2	2.15

## No. 76 Stair Landing Crosses

Size Inches	Price Each
1	\$1.00
1¼	1.20

Size Inches	Price Each
1½	\$1.60
2	2.40



## No. 79 Flanges

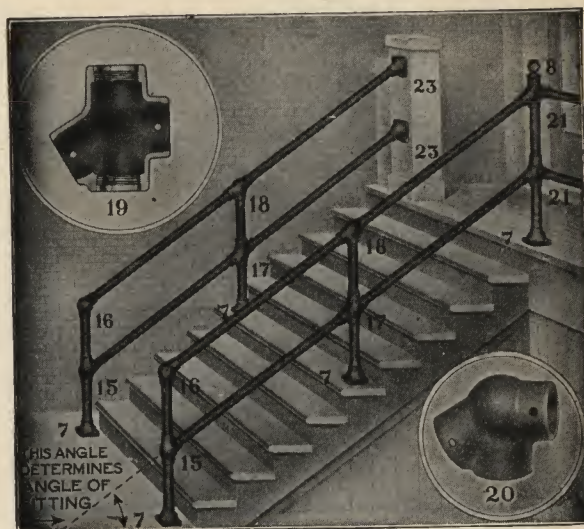


Size Inches	Price Each	Size Inches	Price Each
1	\$1.65	1½	\$1.90
1¼	1.75	2	2.50

Add 50 per cent to above prices for galvanized railing fittings.

All openings are furnished tapped right hand. When ordered tapped otherwise, they will be charged 15 per cent additional.

## Malleable Iron Stair Rail Fittings



These fittings take the place of special angle fittings and are time and money savers. They have a good appearance and are stronger than the adjustable type.

These slip and screwed joint variable angle fittings are made so that all posts are screwed connections, making a solid, substantial job.

The posts are first screwed together and the rails are then fitted and riveted. The run of the fittings are made so that the pipe will slip into the fitting and at the same time allow for an angular variation of 2½ degrees on each side of the center line. In other words, a 30-degree angle fitting may be used on a railing varying from 27½ to 32½ degrees.

After the runs or angle pipes have been slipped into the fittings the pipe is drilled, pins are inserted, riveted over, and the ends of the pins filed smooth. When a railing is correctly finished using these fittings the entire job presents as neat an appearance as if the fittings had been made special to the correct angle.

These fittings may be used on any stair rail between 27½ and 47½ degrees, as follows:

30° fittings—for angles between 27½° and 32½°.

35° fittings—for angles between 32½° and 37½°.

40° fittings—for angles between 37½° and 42½°.

45° fittings—for angles between 42½° and 47½°.

Size Inches	PRICE, EACH				
	No. 15 Angle Tee	No. 16 Angle Elbow	No. 17 Angle Cross	No. 18 Angle Tee	No. 19 Single Angle Cross
1	\$1.30	\$1.10	\$1.50	\$1.30	\$1.50
1¼	1.50	1.25	1.75	1.50	1.75
1½	2.00	1.70	2.35	2.00	2.35
2	2.50	2.25	2.75	2.50	2.75

Size Inches	PRICE, EACH			
	No. 20 Single Angle Tee	No. 21 Angle Tee R. H. Side Outlet	No. 22 Angle Tee L. H. Side Outlet	No. 23 Square Post Angle Flange
1	\$1.30	\$1.85	\$1.85	\$1.50
1¼	1.50	2.20	2.20	1.75
1½	2.00	3.00	3.00	1.90
2	2.50	3.60	3.60	2.25

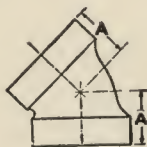
When ordering, specify number and angle of fitting required.



## Cast Iron Drainage Fittings

Screwed for Wrought Pipe

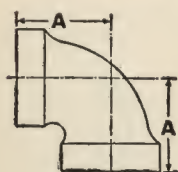
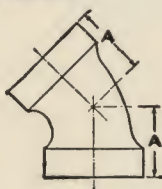
## Elbows

No. D-1000  
90° ElbowNo. D-1003  
45° Elbow

Size Inches	90° OR 45°		DIMENSIONS, A	
	Black Each	Galv. Each	90°	45°
1 1/4	\$ .30	\$ .52	1 3/4	1 3/8
1 1/2	.38	.67	2 3/16	1 7/16
2	.57	1.00	2 3/8	1 3/4
2 1/2	1.20	2.10	2 13/16	2 1/16
3	1.45	2.55	3 3/16	2 3/8
4	2.30	4.00	3 13/16	2 3/4
5	4.25	7.40	4 1/2	3 3/16
6	6.25	11.00	5 5/16	3 1/2
7	11.50	20.00	5 13/16	3 7/8
8	15.00	26.25	6 1/2	4 3/16
10	31.00	54.00	7 3/4	4 7/8
12	47.50	83.00	9	5 1/2
14	65.00	114.00	9 3/4	5 7/8

90° ells size 1 1/2 x 1 1/4, black, \$.57; galvanized, \$1.00; 2 x 1 1/4, black, \$.85; galvanized, \$1.50.

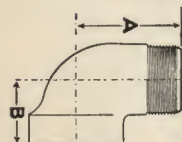
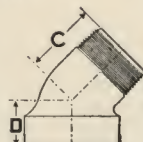
## Long Turn Elbows

No. D-1001  
90° ElbowNo. D-1004  
45° Elbow

Size Inches	90° OR 45°		DIMENSIONS, A	
	Black Each	Galv. Each	90°	45°
1 1/4	\$ .35	\$ .60	2 1/4	1 3/4
1 1/2	.42	.72	2 1/2	1 7/8
2	.65	1.15	3 1/16	2 1/4
2 1/2	1.40	2.45	3 11/16	2 5/8
3	1.75	3.10	4 1/4	2 7/8
4	2.75	4.80	5 3/16	3 3/16
5	5.25	9.20	6 1/8	4 1/8
6	7.50	13.15	7 1/8	4 7/8
7	13.50	23.50	8 1/8	5 1/2
8	19.00	33.25	9	6
10	38.00	66.50	11	7 1/2
12	57.50	100.00	13	8 3/4
14	75.00	130.00	14 1/4	9 1/2

90° elbows are tapped, pitched 1/4 inch to the foot.

## Street Elbows

No. D-1057  
90° ElbowNo. D-1058  
45° Elbow

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES			
			A	B	C	D
1 1/4	\$ .35	\$ .60	2 5/8	1 5/8	1 7/8	1 3/16
1 1/2	.40	.70	2 15/16	1 15/16	2	1 1/4
2	.60	1.10	3 3/16	2 1/8	2 7/16	1 3/4

These fittings have an interior shoulder and are made with same inside capacity as the inside diameter of the pipe, thus securing an unobstructed surface, allowing all solid matter to pass without choking the pipes.

## Cast Iron Drainage Fittings

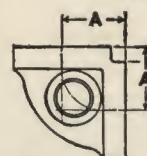
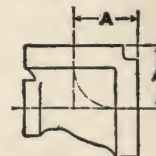
Screwed for Wrought Pipe

## Elbows

No. D-1002  
60° ElbowNo. D-1005  
22 1/2° ElbowNo. D-1006  
11 1/4° ElbowNo. D-1007  
5 5/8° Elbow

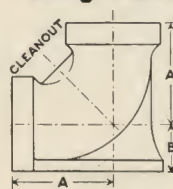
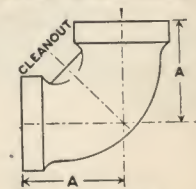
Size Inches	Black Each	Galv. Each	DIMENSIONS, A			
			60°	11 1/4°	22 1/2°	5 5/8°
1 1/4	\$ .30	\$ .52	1 9/16	1	1 1/8	1
1 1/2	.38	.67	1 3/4	1 7/32	1 1/4	1 5/16
2	.57	1.00	2	1 13/32	1 7/16	1 1/2
2 1/2	1.20	2.10	2 1/2	1 21/32	1 3/4	...
3	1.45	2.55	2 7/8	1 13/16	2	1 3/4
4	2.30	4.00	3 3/8	2 1/8	2 5/16	2
5	4.25	7.40	3 7/8	2 3/8	2 5/8	2 1/4
6	6.25	11.00	4 3/16	2 1/2	2 13/16	2 3/16
7	11.50	20.00	4 1/2	2 5/8	3 1/4	2 3/8
8	15.00	26.25	5 3/8	2 3/4	3 9/16	2 1/2
10	31.00	54.00	6 1/4	3	3 7/8	2 3/4
12	47.50	83.00	...	...	4 3/16	...

## Elbows with Outlet

No. D-1008  
Side OutletNo. D-1009  
Heel Outlet

Size Inches	Black Each	Galv. Each	Dimensions, A Inches	Outlets Inches
4	\$3.85	\$6.75	3 13/16	2

## Long Turn Elbows with Cleanout

No. D-1056  
With BaseNo. D-1047  
Without Base

Size Inches	WITH BASE		WITHOUT BASE		DIMENSIONS		Out- lets In.
	Black Each	Galv. Each	Black Each	Galv. Each	A Inches	B Inches	
4	\$7.00	\$12.25	\$5.00	\$8.75	6 1/4	2 7/8	2

The inlets on reducing fittings are always the smallest openings.

These fittings have an interior shoulder, and are made with same inside capacity as the inside diameter of the pipe, thus securing an unobstructed surface, allowing all solid matter to pass without choking the pipe.

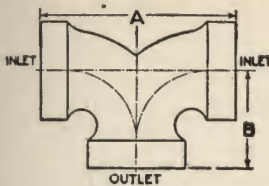
Fittings are chamfered, thus preventing damage to the threads and permitting of an easy entrance of the pipe in making up joints.

All fittings are regularly made of a gray iron, of superior quality and high tensile strength, and thoroughly inspected before leaving factory.



### Cast Iron Drainage Fittings Screwed for Wrought Pipe

#### Three-Way Elbows

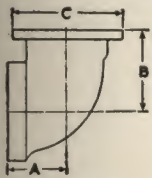


No. D-1010

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES	
			A	B
1 1/4	\$ .75	\$1.25	4 1/2	2 1/4
1 1/2	.85	1.50	5 1/4	2 5/8
2	1.10	1.95	6 1/4	3 1/8
2 1/2	2.25	3.90	7 3/8	3 11/16
3	3.00	5.25	8 5/8	4 5/16
4	5.00	8.75	10 3/8	5 5/16
4x3	5.50	9.65	9 1/2	4 5/16
5	7.50	13.15	12 1/4	6 1/8
5x4	8.25	14.50	11 3/8	5 5/16
6	13.50	23.50	14 1/4	7 1/8
6x4	15.00	26.25	12 3/8	5 7/16
6x5	15.00	26.25	13 3/8	6 1/4

The inlets of three-way elbows are tapped, pitched 1/4 inch to the foot.

#### Closet Elbows

No. D-1012  
Flanged One EndNo. D-1013  
Reducing

#### Flanged Closet Elbows

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		Diam. Flange Inches
			A	B	
4	\$4.25	\$7.40	3 13/16	4 5/8	7

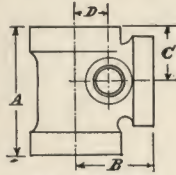
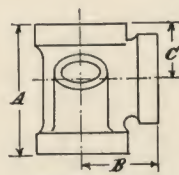
#### Reducing Closet Elbows

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES	
			A	B
4x5	\$4.25	\$7.40	4 5/16	3 13/16

The inlets of closet elbows are tapped, pitched 1/4 inch to the foot.

#### Closet Tees

#### Tee Pattern 90° Y Branches with Auxiliary Inlet on Body

No. D-1052  
Straight InletNo. D-1050  
Vent on BranchNo. D-1054  
45° Inlet

Size In.	Size Inlet In.	DIMENSIONS, INCHES			
		A	B	C	D
4	2	8 3/4	5 5/16	3 3/16	2 5/16

#### With Straight Auxiliary Inlet

	Black	Galv.
Right Side Inlet.....each	\$5.75	\$10.00
Left Side Inlet.....each	5.75	10.00

#### With Vent on Branch

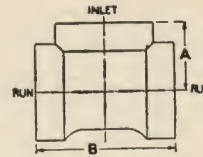
	Black	Galv.
Right Side Inlet.....each	\$5.75	\$10.00
Left Side Inlet.....each	5.75	10.00

#### With 45° Auxiliary Inlet

	Black	Galv.
Right Side Inlet.....each	\$6.35	\$11.00
Left Side Inlet.....each	6.35	11.00

### Cast Iron Drainage Fittings Screwed for Wrought Pipe

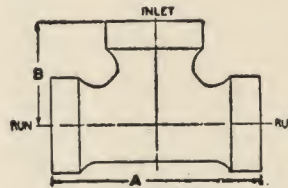
#### Tees



No. D-1017

Size Inches	Black Each	Galv. Each	DIMENSIONS, IN.	
			A	B
1 1/4	\$.45	\$ .80	1 3/4	3 1/2
1 1/2	.55	1.00	2 3/16	4 3/8
1 1/2 x 1 1/4	.60	1.10	2 3/16	4 3/8
2	.80	1.40	2 5/8	4 3/8
2 x 1 1/4	.90	1.60	2 1/4	4 1/8
2 x 1 1/2	1.50	2.50	2 13/16	5 5/8
2 1/2	1.65	2.75	3 3/16	6 3/8
2 1/2 x 2	2.00	3.50	3	5 1/2
3	2.20	3.85	4	8
3 x 1 1/2	2.20	3.85	3 3/16	6 3/8
3 x 2	3.25	5.70	4	8
4	3.60	6.30	3 3/16	6
4 x 2	3.60	6.30	3 3/4	7
4 x 3	6.00	10.50	4 5/8	9 1/4
5	6.60	11.55	4 3/8	6
5 x 2	6.60	11.55	4 3/8	6 7/8
5 x 3	6.60	11.55	5 5/16	10 3/8
5 x 4	8.75	15.25	5 13/16	11 5/8
6	16.00	28.00	6 1/2	13
7	21.00	37.00	7 3/4	15 1/2
8	43.00	75.00	9	18
10	60.00	100.00	...	...
12	65.00	110.00	...	...
12 x 8	65.00	110.00	...	...
12 x 10	85.00	145.00	...	...
14 x 8	85.00	145.00	...	...
14 x 10	85.00	145.00	...	...
14 x 12	85.00	145.00	...	...

#### Basin Tees

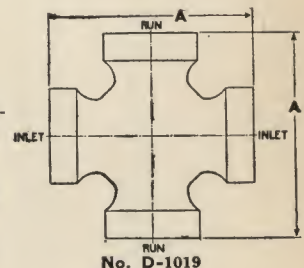


No. D-1018

Size Inches	Black Each	Galv. Each	DIMEN. IN.	
			A	B
1 1/4	\$ .60	\$1.00	4 5/8	2 5/16
1 1/2	.70	1.22	5 3/8	2 1/16
1 1/2 x 1 1/4	.77	1.35	5 1/8	2 3/16
2	1.10	1.95	7	3 1/2
2 x 1 1/4	1.20	2.10	6 1/4	3 3/8
2 x 1 1/2	1.20	2.10	6 1/2	3 3/4
2 1/2	1.75	3.00	8 1/2	4 1/4

#### Basin Crosses

Size In.	Black Each	Galv. Each	Dimen- sions A In.
1 1/4	\$1.25	\$2.25	4 5/8
1 1/2	1.50	2.50	5 3/8
2	1.75	3.10	7
2x1 1/2	1.95	3.40	6 1/2



No. D-1019

Inlets of tees and crosses are tapped, pitched 1/4 inch to the foot.

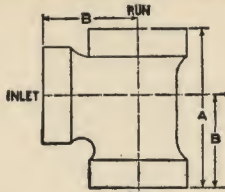
Inlets on reducing fittings are always the smallest opening.

These fittings have an interior shoulder, and are made with same inside capacity as the inside diameter of the pipe, thus securing an unobstructed surface, allowing all solid matter to pass without choking the pipes.

Fittings are chamfered, thus preventing damage to the threads and permitting of an easy entrance of the pipe in making up joints.



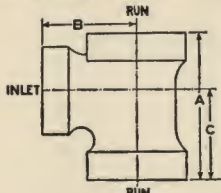
### Cast Iron Drainage Fittings Screwed for Wrought Pipe Tee Pattern 90° Y Branches



No. D-1020

Size Inches	Black Each	Galv. Each	DIMENSIONS, IN.	
			A	B
1	\$ .40	\$ .70	3 1/4	1 15/16
1 1/4	.45	.80	3 3/4	2 1/4
1 1/2	.57	1.00	4 1/4	2 1/2
2	.85	1.50	5 5/16	3 1/16
2 1/2	1.80	3.15	6 5/16	3 11/16
3	2.20	3.85	7 1/4	4 1/4
4	3.50	6.15	8 3/4	5 5/16
5	6.50	11.35	10 5/16	6 1/8
6	9.50	16.50	11 15/16	7 1/8
7	17.50	30.50	13 5/8	8 1/8
8	23.00	40.00	15 1/16	9
10	47.00	82.00	20	11 3/8
12	70.00	124.00	24 1/4	13 3/4

### Reducing Tee Pattern 90° Y Branches



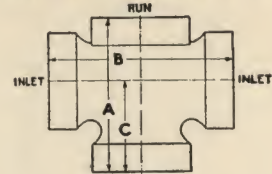
No. D-1021

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/4 x 1	\$ .50	\$ .90	.....	.....	.....
1 1/2 x 1	.63	1.10	.....	.....	.....
1 1/2 x 1 1/4	.63	1.10	3 7/8	2 1/2	2 3/8
2 x 1 1/4	.95	1.65	.....	.....	.....
2 x 1 1/2	.95	1.65	4 5/8	2 15/16	2 11/16
2 1/2 x 1 1/4	2.00	3.50	.....	.....	.....
2 1/2 x 1 1/2	2.00	3.50	4 7/8	3 1/16	2 13/16
2 1/2 x 2	2.00	3.50	5 1/2	3 5/16	3 1/4
3 x 1 1/4	2.40	4.20	.....	.....	.....
3 x 1 1/2	2.40	4.20	5 1/16	3 3/16	2 15/16
3 x 2	2.40	4.20	5 1/16	3 5/8	3 3/16
4 x 1 1/4	3.85	6.75	.....	.....	.....
4 x 1 1/2	3.85	6.75	5 1/4	3 13/16	3
4 x 2	3.85	6.75	5 13/16	4 1/16	3 3/8
4 x 2 1/2	3.85	6.75	6 5/8	4 1/16	3 13/16
4 x 3	3.85	6.75	7 3/8	4 3/4	4 5/16
3 x 4	3.85	6.75	8 5/8	5 3/16	5 1/8
5 x 1 1/2	7.15	12.50	5 9/16	4 3/8	3 3/16
5 x 2	7.15	12.50	6 1/8	4 5/8	3 9/16
5 x 2 1/2	7.15	12.50	.....	.....	.....
5 x 3	7.15	12.50	7 3/4	5 1/4	4 1/2
5 x 4	7.15	12.50	9 1/8	5 11/16	5 3/8
6 x 1 1/2	10.50	18.50	.....	.....	.....
6 x 2	10.50	18.50	6 1/4	5 1/8	3 5/8
6 x 3	10.50	18.50	7 7/8	5 3/4	4 9/16
6 x 4	10.50	18.50	9 1/4	6 3/16	5 1/16
6 x 5	10.50	18.50	10 9/16	6 5/8	6 1/4
8 x 2	25.50	44.50	.....	.....	.....
8 x 3	25.50	44.50	11 7/16	7 1/4	7 15/16
8 x 4	25.50	44.50	11 7/16	7 9/16	7 1/2
8 x 5	25.50	44.50	.....	.....	.....
8 x 6	25.50	44.50	15 1/16	8 5/16	9 5/8

The inlet of 90° Y branches is tapped, pitched 1/4 inch to the foot.

These fittings have an interior shoulder, and are made with same inside capacity as the inside diameter of the pipe, thus securing an unobstructed surface, allowing all solid matter to pass without choking the pipe.

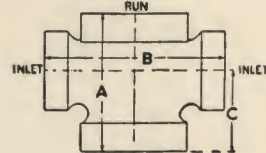
### Cast Iron Drainage Fittings Screwed for Wrought Pipe Tee Pattern 90° Double Y Branches



No. D-1024

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1	\$ .60	\$ 1.05	3 1/4	3 3/8	1 15/16
1 1/4	.70	1.22	3 3/4	4 1/2	2 1/4
1 1/2	.85	1.50	4 1/4	5	2 1/2
2	1.30	2.30	5 5/16	6 1/8	3 1/16
2 1/2	2.85	5.00	6 5/16	7 3/8	3 11/16
3	3.40	5.95	7 1/4	8 1/2	4 1/4
4	5.25	9.20	8 3/4	10 3/8	5 5/16
5	9.50	16.50	10 5/16	12 1/4	6 1/8
6	14.00	24.50	11 15/16	14 1/4	7 1/8
7	25.00	42.50	13 5/8	16 1/4	8 3/8
8	36.00	62.00	15 1/16	18	9
10	60.00	102.00	20	22 3/4	11 3/8

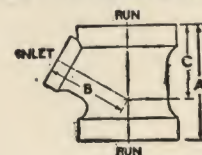
### Reducing Tee Pattern 90° Double Y Branches



No. D-1025

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/4 x 1	\$ .77	\$ 1.35	.....	.....	.....
1 1/2 x 1 1/4	.95	1.65	3 7/8	5	2 3/8
2 x 1 1/4	1.50	2.60	.....	.....	.....
2 x 1 1/2	1.50	2.60	4 5/8	5 7/8	2 11/16
2 1/2 x 1 1/2	3.15	5.50	.....	.....	.....
2 1/2 x 2	3.15	5.50	5 1/2	6 5/8	3 1/4
3 x 1 1/2	3.75	6.55	5 1/16	6 5/8	2 15/16
3 x 2	3.75	6.55	5 11/16	7 1/4	3 3/16
4 x 2	5.75	10.00	5 13/16	8 1/8	3 3/8
5 x 3	10.50	18.50	7 3/4	10 1/2	4 1/2
5 x 4	10.50	18.50	9 1/8	11 3/8	5 3/8
6 x 2	15.50	27.00	6 1/4	10 1/4	3 5/8
6 x 4	15.50	27.00	9 1/4	12 3/8	5 7/16
6 x 5	15.50	27.00	10 9/16	13 1/4	6 1/4
8 x 6	40.00	68.00	15 1/16	16 5/8	9 5/8

### 60° Y Branches



No. D-1032

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/2 x 1 1/2	\$ .65	\$ 1.15	4 5/8	2 5/8	2 5/8
2 x 2	.95	1.65	5 1/2	3 1/4	3 1/4
2 x 1 1/2	1.05	1.85	4 13/16	3 1/16	2 15/16
3 x 2	2.90	5.10	6 7/16	4 1/8	3 13/16
4 x 4	3.85	6.75	9 3/8	5 3/4	5 3/4
4 x 2	4.25	7.40	6 11/16	4 3/4	4 3/16
4 x 3	4.25	7.40	.....	.....	.....
5 x 5	7.10	12.50	11 1/8	6 3/4	6 3/4
5 x 2	7.80	13.65	.....	.....	.....
5 x 3	7.80	13.65	8 1/2	6	5 5/16
5 x 4	7.80	13.65	.....	.....	.....
6 x 6	10.50	18.50	13	7 7/8	7 7/8
6 x 2	11.50	20.00	.....	.....	.....
6 x 4	11.50	20.00	.....	.....	.....
6 x 5	11.50	20.00	.....	.....	.....
8 x 4	27.50	48.00	11 7/16	8 9/16	7 3/8
8 x 6	27.50	48.00	.....	.....	.....

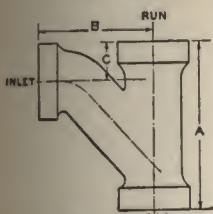
Reducing sizes not listed take same lists as reducing sizes having the same run.



## Cast Iron Drainage Fittings

Screwed for Wrought Pipe

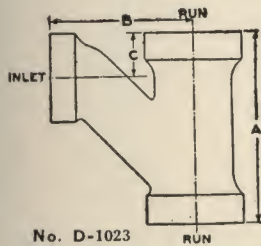
## Tee Pattern 90° Long Turn Y Branches



Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/4	\$1.57	\$1.00	4 3/4	3 5/8	1 3/16
1 1/2	.70	1.22	5 3/8	4 1/8	1 1/4
2	1.10	1.95	7 1/16	5 7/16	1 5/8
2 1/2	2.40	4.20	8 1/4	6 1/4	2
3	3.35	5.85	9 13/16	7 1/2	2 5/16
4	6.00	10.50	13 3/4	9 7/8	2 7/8
5	9.50	16.50	15 3/4	12 1/4	3 1/2
6	20.00	35.00	18 11/16	14 9/16	4 1/8
7	30.00	52.50	21 5/8	16 7/8	4 3/4
8	40.00	70.00	24 9/16	19 5/16	5 1/4

No. D-1022

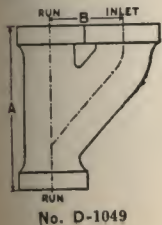
## Reducing Tee Pattern 90° Long Turn Y Branches



Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/4 x 1	\$1.63	\$1.10	4 1/4	3 1/2	1
1 1/2 x 1	.80	1.40	4 1/2	3 5/8	1
1 1/2 x 1 1/4	.80	1.40	5 1/8	3 7/8	1 3/16
2 x 1	1.20	2.10	...	...	...
2 x 1 1/4	1.20	2.10	...	...	...
2 x 1 1/2	1.20	2.10	5 3/4	4 3/8	1 5/16
2 1/2 x 1	2.65	4.65	...	...	...
2 1/2 x 1 1/4	2.65	4.65	...	...	...
2 1/2 x 1 1/2	2.65	4.65	5 3/4	4 9/16	1 5/16
2 1/2 x 2	2.65	4.65	7 9/8	5 3/4	1 5/8
3 x 1 1/2	3.75	6.55	5 15/16	5	1 5/16
3 x 2	3.75	6.55	7 9/16	6 1/16	1 5/8
3 x 2 1/2	3.75	6.55	...	...	...
4 x 1 1/2	6.60	11.55	6 1/16	5 7/16	1 5/16
4 x 2	6.60	11.55	7 11/16	6 5/8	1 5/8
4 x 2 1/2	6.60	11.55	8 5/8	7 1/16	2
4 x 3	6.60	11.55	10	8 1/16	2 3/8
5 x 1 1/2	10.50	18.50	6 5/16	6	1 3/8
5 x 2	10.50	18.50	7 3/4	7 1/8	1 5/8
5 x 2 1/2	10.50	18.50	10 1/4	8 5/8	2 3/8
5 x 3	10.50	18.50	13	10 7/16	2 3/8
5 x 4	10.50	18.50	7 15/16	7 3/4	1 5/8
6 x 2	22.00	38.50	10 3/8	9 1/8	2 5/16
6 x 3	22.00	38.50	13 1/16	11	2 7/8
6 x 4	22.00	38.50	16 1/16	12 13/16	3 1/2
6 x 5	22.00	38.50	10 7/8	9 11/16	2 5/8
7 x 3	33.00	58.00	13 3/16	11 5/8	2 7/8
7 x 4	33.00	58.00	...	...	...
7 x 5	33.00	58.00	...	...	...
7 x 6	33.00	58.00	...	...	...
8 x 3	44.00	77.00	10 5/8	10 1/4	2 5/16
8 x 4	44.00	77.00	13 3/8	12	2 15/16
8 x 6	44.00	77.00	19 1/4	15 9/16	4 1/8
10 x 4	60.00	102.00	...	...	...
12 x 5	85.00	150.00	...	...	...

The inlet of 90° long turn Y branches is tapped, pitched 1/4 inch to the foot.

## Special Upright Y Branches

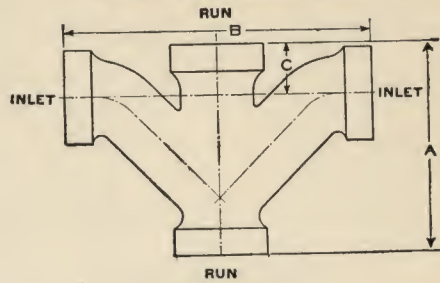


Size Inches	Black Each	Galv. Each	DIMEN., IN.	
			A	B
2 x 1 1/2	\$2.90	\$5.10	5 7/8	2 15/16
2 1/2 x 1 1/2	4.50	7.75	5 15/16	3 5/16
2 1/2 x 2	4.50	7.75	7 1/8	3 5/8
3 x 2	6.00	10.50	9 11/16	4 5/8
3 x 3	5.50	9.75	9 11/16	4 5/8
4 x 2	8.75	15.25	7 1/8	4 9/16
4 x 4	8.00	14.00	11 3/4	5 13/16

## Cast Iron Drainage Fittings

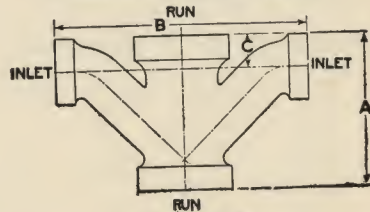
Screwed for Wrought Pipe

## Tee Pattern 90° Long Turn Double Y Branches



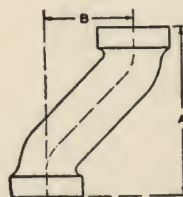
Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/4	\$1.00	\$1.75	4 3/4	7 1/4	1 3/16
1 1/2	1.10	1.95	5 3/8	8 1/4	1 1/4
2	1.75	3.10	7 1/16	10 7/8	1 5/8
2 1/2	3.60	6.30	8 1/4	12 1/2	2
3	5.00	8.75	9 13/16	15	2 5/16
4	9.00	15.75	13 3/4	19 3/4	2 7/8
5	14.00	24.50	15 3/4	24 1/2	3 1/2
6	30.00	52.50	18 11/16	29 1/8	4 1/8
7	45.00	79.00	21 5/8	33 3/4	4 3/4
8	60.00	105.00	24 9/16	38 3/8	5 1/4

## Reducing Tee Pattern 90° Long Turn Double Y Branches



Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/4 x 1	\$1.10	\$1.90	4 1/4	7	1
1 1/2 x 1	1.25	2.25	4 1/2	7 1/4	1
1 1/2 x 1 1/4	1.25	2.25	5 1/8	7 3/4	1 3/16
2 x 1 1/4	1.90	3.35	...	...	...
2 x 1 1/2	1.90	3.35	5 3/4	8 3/4	1 5/16
2 1/2 x 1 1/4	4.00	7.00	5 3/4	9 1/8	1 5/16
2 1/2 x 1 1/2	4.00	7.00	5 15/16	10	1 5/16
3 x 1 1/2	5.50	9.65	7 9/16	12 1/8	1 5/8
3 x 2	5.50	9.65	7 11/16	13 1/4	1 5/8
4 x 2	10.00	17.50	10	16 1/8	2 3/8
4 x 3	10.00	17.50	13	20 7/8	2 7/8
5 x 4	15.50	27.00	13	20 7/8	2 7/8
6 x 2	33.00	58.00	7 15/16	15 1/2	1 5/8
6 x 4	33.00	58.00	13 1/16	22	2 7/8
6 x 5	33.00	58.00	16 1/16	22 5/8	3 1/2

## Offsets

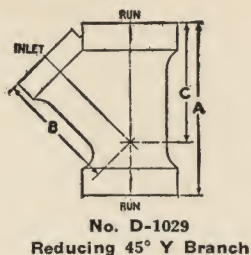
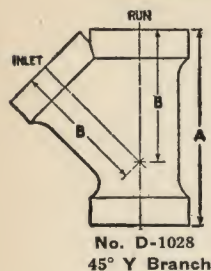


Size Offset In.	Offset B, In.	Length A, In.	Black Each	Galv. Each
3	6	10 3/4	\$4.00	\$7.00
3	8	12 3/4	4.75	8.30
3	10	14 3/4	5.50	9.65
4	4	9 3/4	5.00	8.75
4	6	11 3/4	5.75	10.00
4	8	13 3/4	6.50	11.35
4	10	15 3/4	7.50	13.15
4	12	17 3/4	8.50	15.00
5	6	12 5/8	9.00	15.75
5	8	14 5/8	10.00	17.50
5	10	16 5/8	11.00	19.25
5	12	18 5/8	12.00	21.00
6	6	13 5/8	12.50	22.00
6	8	15 5/8	13.50	23.50
6	10	17 5/8	14.50	25.50
6	12	19 5/8	15.50	27.00



## Cast Iron Drainage Fittings

Screwed for Wrought Pipe



## 45° Y Branches

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES	
			A	B
1 1/4	\$ .52	\$ .90	5	3 1/4
1 1/2	.65	1.15	5 1/2	3 5/8
2	.95	1.65	6 7/16	4 5/16
2 1/2	2.10	3.70	7 7/8	5 3/8
3	2.65	4.65	9	6 3/16
4	3.85	6.75	10 7/8	7 11/16
5	7.10	12.50	12 13/16	9 3/16
6	10.50	18.50	14 3/4	10 3/4
7	19.00	33.25	16 11/16	12 1/4
8	25.00	44.00	18 13/16	13 3/16
10	52.00	91.00	20	16 1/8
12	75.00	130.00	24 1/4	19 5/8
14	95.00	165.00	28	21 1/2

## Reducing 45° Y Branches

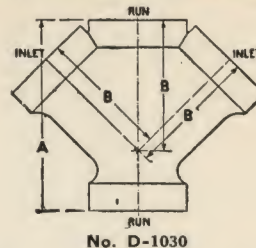
Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/2 x 1 1/4	\$ .72	\$ 1.25	...	...	...
2 x 1 1/4	1.05	1.85	...	...	...
2 x 1 1/2	1.05	1.85	5 7/8	4 1/8	4 1/16
2 1/2 x 1 1/4	2.30	4.00	6 7/16	4 5/8	4 9/16
2 1/2 x 1 1/2	2.30	4.00	7 1/16	5 3/8	4 15/16
3 x 1 1/4	2.90	5.10	6 5/8	5 1/16	4 15/16
3 x 1 1/2	2.90	5.10	7 3/8	5 3/8	5 3/16
3 x 2	2.90	5.10	8	5 13/16	5 11/16
3 x 2 1/2	2.90	5.10	8	5 13/16	5 11/16
4 x 1 1/4	4.25	7.40	7 7/16	6 1/16	5 3/4
4 x 1 1/2	4.25	7.40	7 11/16	6 5/16	6
4 x 2	4.25	7.40	9 1/4	7 3/16	6 7/8
4 x 2 1/2	4.25	7.40	9 1/4	7 3/16	6 7/8
5 x 2	7.80	13.65	8 1/4	7 3/16	6 7/8
5 x 3	7.80	13.65	9 3/16	7 7/8	7 5/8
5 x 4	7.80	13.65	11 3/8	8 1/2	8 7/16
6 x 2	11.50	20.00	8 7/16	8 1/16	7 9/16
6 x 2 1/2	11.50	20.00	...	...	...
6 x 3	11.50	20.00	10	8 3/4	8 5/16
6 x 4	11.50	20.00	11 7/8	9 3/8	9 1/16
6 x 5	11.50	20.00	13	10	9 13/16
7 x 3	21.00	37.00	10	9 5/8	8 7/8
7 x 4	21.00	37.00	11 7/16	10 1/4	9 11/16
7 x 5	21.00	37.00	16 1/16	12 1/4	12 1/4
7 x 6	21.00	37.00	16 1/16	12 1/4	12 1/4
8 x 3	27.50	48.00	...	...	...
8 x 4	27.50	48.00	11 7/16	11	10 7/16
8 x 5	27.50	48.00	...	...	...
8 x 6	27.50	48.00	14 15/16	12 3/8	11 7/8
10 x 4	57.00	97.00	14	12 7/8	11 1/2
10 x 5	57.00	97.00	...	...	...
10 x 6	57.00	97.00	15 1/2	14 1/4	13 1/2
12 x 6	80.00	140.00	18	15 3/4	14 1/4
14 x 3	105.00	175.00	...	...	...
14 x 4	105.00	175.00	...	...	...
14 x 5	105.00	175.00	...	...	...
14 x 6	105.00	175.00	19 1/2	17 3/4	16 3/8
14 x 12	105.00	175.00	...	...	...

The inlets on reducing fittings are always the smallest openings.

## Cast Iron Drainage Fittings

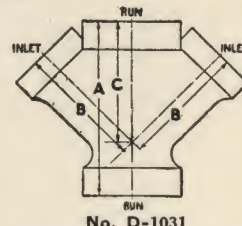
Screwed for Wrought Pipe

## 45° Double Y Branches



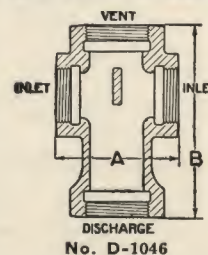
Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES	
			A	B
1 1/4	\$ .90	\$ 1.60	5	3 1/4
1 1/2	1.00	1.75	5 1/2	3 5/8
2	1.45	2.55	6 7/16	4 5/16
2 1/2	3.25	5.70	7 7/8	5 3/8
3	4.00	7.00	9	6 3/16
4	5.75	10.00	10 7/8	7 11/16
5	10.75	18.80	12 13/16	9 3/16
6	16.00	28.00	14 3/4	10 3/4
7	28.50	50.00	16 11/16	12 1/4
8	38.00	66.50	18 13/16	13 3/16
10	78.00	137.00	20	16 1/8

## Reducing 45° Double Y Branches



Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES		
			A	B	C
1 1/2 x 1 1/4	\$ 1.10	\$ 1.90	...	...	...
2 x 1 1/2	1.60	2.80	5 7/8	4 1/8	4 1/16
2 1/2 x 1 1/4	3.60	6.30	6 7/16	4 5/8	4 9/16
2 1/2 x 1 1/2	3.60	6.30	7 1/16	5 3/8	4 15/16
3 x 1 1/2	4.40	7.70	6 5/8	5 1/16	4 15/16
3 x 2	4.40	7.70	7 3/8	5 3/8	5 3/16
4 x 2	6.35	11.00	7 7/16	6 5/16	6
4 x 3	6.35	11.00	9 1/4	7 3/16	6 7/8
5 x 2	11.75	20.50	8 1/4	7 3/16	6 7/8
5 x 3	11.75	20.50	9 13/16	7 7/8	7 5/8
5 x 4	11.75	20.50	11 3/8	8 1/2	8 7/16
6 x 2	17.50	30.50	8 7/16	8 1/16	7 9/16
6 x 3	17.50	30.50	...	...	...
6 x 4	17.50	30.50	11 7/8	9 3/8	9 1/16
7 x 6	31.50	54.00	...	...	...
8 x 4	42.00	72.00	11 7/16	11	10 7/16
8 x 6	42.00	72.00	14 15/16	12 3/8	11 7/8

## Partition Crosses



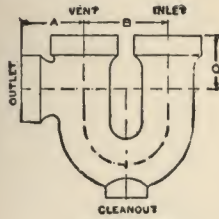
Partition crosses are made to supply a demand in certain localities. It may not be passed by inspectors everywhere.

Size Inches	Black Each	Galv. Each	DIMENSIONS, INCHES	
			A	B
1 1/2 x 1 1/4	\$ 1.25	\$ 2.20	3 1/2	5 1/2



**Cast Iron Drainage Fittings**

Screwed for Wrought Pipe

**Half S Traps with Vent**

No. D-1037

Size In.	DIMENSIONS, INCHES					PRICE, EACH	
	A	B	C	Vent	Cleanout	Black	Galv.
1 1/4	2 5/8	3 1/8	2	1 1/4	3/4	\$1.55	\$2.70
1 1/2	2 1/2	3 3/8	2 1/4	1 1/2	1	1.70	3.00
2	3 1/8	4	2 9/16	2	1	2.20	3.85
3	4 3/8	5 3/8	3 1/2	3	1 1/4	5.00	8.75
4	5 1/8	7	4 9/16	4	2	10.00	17.50
5	6 1/8	8 3/8	4 3/4	4	2	21.50	37.50
6	6 3/8	10 1/8	5 7/16	4	2	32.50	57.00
7	7 3/4	11 1/4	6 1/8	5	2	40.00	70.00
8	8 5/8	12 3/8	6 3/4	6	3	55.00	95.00

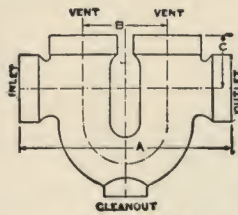
The outlet of half S trap is tapped, pitched 1/4 inch to the foot.

These fittings have an interior shoulder, and are made with same inside capacity as the inside diameter of the pipe, thus securing an unobstructed surface, allowing all solid matter to pass without choking the pipes.

Fittings are chamfered, thus preventing damage to the threads and permitting of an easy entrance of the pipe in making up joints.

All fittings are regularly made of a gray iron, of superior quality and high tensile strength, and thoroughly inspected before leaving factory.

When not otherwise specified, fittings will be coated with heated asphaltum.

**Running Traps with Double Vent**

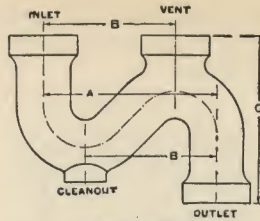
No. D-1038

Size Inches	DIMENSIONS, INCHES					PRICE, EACH	
	A	B	C	Vents	Cleanout	Black	Galv.
1 1/4	7 3/4	3 1/8	2	1 1/4	3/4	\$2.40	\$4.20
1 1/2	8 3/8	3 3/8	2 1/4	1 1/2	1	2.70	4.70
2	10 1/8	4	2 9/16	2	1	3.30	5.75
3	13 1/4	5 3/8	3 1/2	3	1 1/4	5.50	9.50
4	17 1/4	7	4 3/16	4	2	9.75	17.00
5	20 1/2	8 3/8	4 3/4	4	2	24.50	43.00
6	23 1/4	10 1/8	5 7/16	4	2	33.50	58.50
7	26 3/4	11 1/4	6 1/8	5	2	50.00	87.50
8	30 1/4	12 3/8	6 3/4	6	3	65.00	115.00
10	36 1/4	14 3/4	8 1/4	6	3	115.00	200.00
12	41 7/8	17	9 1/2	6	3	180.00	300.00
14	45	18 1/2	10 1/2	8	4	300.00	500.00

The inlet and outlet of running traps is tapped, pitched 1/4 inch to the foot.

All fittings are regularly made of a gray iron, of superior quality and high tensile strength, and thoroughly inspected before leaving factory.

When not otherwise specified, fittings will be coated with heated asphaltum.

**Cast Iron Drainage S Traps With Vent**

Screwed for Wrought Pipe

Size In.	DIMENSIONS, INCHES			Size Cleanout Inches	PRICE, EACH	
	A	B	C		Black	Galv.
2	8 1/4	6 1/4	8	1	\$4.00	\$7.00
3	10 3/4	8 1/8	11 1/4	1 1/4	9.25	16.00
4	14 1/8	10 5/8	13 3/4	2	14.00	24.00
5	16 3/4	12 9/16	16 7/8	2	21.00	37.00
6	20 1/4	15 3/16	19 3/4	2	36.00	63.00

The vent for the 2-inch size is 2 inches; 3-inch size, 3 inches; 4, 5 and 6-inch sizes, 4 inches.

**Cast Iron Drainage P Traps**

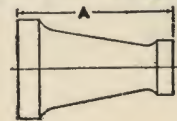
Screwed for Wrought Pipe

No. D-1059

Size Inches	EACH		DIMENSIONS, INCHES			Size Cleanout Inches
	Black	Galv.	A	B	C	
1 1/4	\$1.45	\$2.55	1 5/16	2	3/4	3/4
1 1/2	1.55	2.70	2 1/8	2 1/4	7/8	1
2	2.00	3.50	2 9/16	2 3/4	7/8	1
3	4.70	8.25	3 3/8	3 3/4	1 3/16	1 1/4

**Cast Iron Drainage Increases**

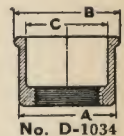
Screwed for Wrought Pipe



Size Inches	Dimensions, A Inches	PRICE, EACH	
		Black	Galv.
2 x 1 1/2	9	\$1.75	\$3.00
2 1/2 x 2	9	2.00	3.50
3 x 2	9	2.50	4.40
4 x 2	9	3.75	6.55
4 x 3	9	3.75	6.55
5 x 2	9	5.50	9.65
5 x 3	9	5.50	9.65
5 x 4	9	5.50	9.65
6 x 4	9	6.50	11.35
6 x 5	9	6.50	11.35
7 x 4	..	12.00	20.00
7 x 6	..	12.00	20.00
8 x 4	9	15.00	26.25
8 x 6	9	15.00	26.25
10 x 8	..	20.00	35.00
12 x 10	..	40.00	70.00
14 x 6	..	55.00	95.00
14 x 8	..	55.00	95.00
14 x 12	..	55.00	95.00

**Cast Iron Drainage Hub Connections**

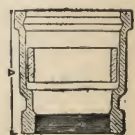
Size In.	DIMENSIONS, INCHES			PRICE, EACH	
	A	B	C	Black	Galv.
2	3 1/2	3 3/16	3	\$1.15	\$2.00
3	4 9/16	4 15/16	4 1/8	1.20	2.10
4	5 5/8	6	5 1/8	1.50	2.60
5	6 1/16	7 1/16	6	2.00	3.50
6	7 3/4	8 3/16	7 1/8	4.25	7.40



No. D-1034

**Tucker Cast Iron Drainage Connections**

Size Inches	Dimensions A, Inches	PRICE, EACH	
		Black	Galvanized
2	4 1/2	\$ .80	\$1.40
3	4 3/4	2.00	3.50
4	7	3.25	5.70
5	7	6.00	10.50
6	7	8.75	15.25
8	7	21.00	37.00



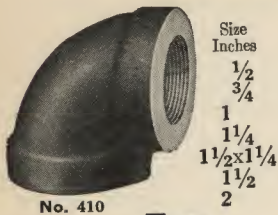
No. D-1048



### Extra Heavy Cast Iron Car Heater Fittings

For 250 Pounds Steam Working Pressure

#### Elbows

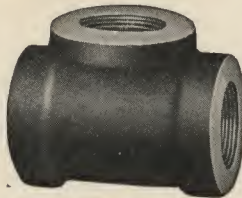


Size Inches	PRICE, EACH	
	R. H.	R. and L.
1/2	\$.22	\$.22
3/4	.25	.25
1	.27	.27
1 1/4	.30	.30
1 1/2 x 1 1/4	.45	.45
1 1/2	.45	.45
2	.55	.55

No. 410

#### Tees

Size, Inches	Price, Each
1/2	\$.30
3/4	.35
1	.40
1 1/4	.45
1 1/4 x 3/4 x 1 1/4	.45
1 1/4 x 1 1/4 x 3/4	.45
1 1/4 x 1 1/4 x 1 1/2	.45
1 1/2 x 1 1/2 x 3/4	.65
1 1/2	.65
2	.85



No. 411

#### Return Bends



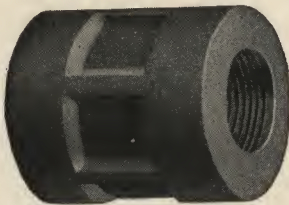
No. 412

Size Inches	Distance Between Centers, In.	PRICE, EACH	
		R. H.	R. and L.
1	2 3/8	\$.45	\$.52
1 1/4	2 1/2	.45	.52
1 1/4	3	.50	...
1 1/4	4	.60	...
1 1/4	5	.70	...
1 1/4	6	.85	...
1 1/4	8	1.10	...
1 1/2	2 1/2	.80	.90
1 1/2	3 1/2	1.25	1.45
2	3 1/2	1.00	1.15
2	4 1/2	1.75	...
2	6	2.00	....

### Extra Heavy Car Heater Couplings

For 250 Pounds Steam Working Pressure

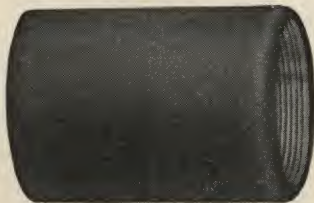
#### Cast Iron



No. 413

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	R. H.	R. and L.		R. H.	R. and L.
1	\$.25	\$.35	1 1/2	\$.45	\$.55
1 1/4	.30	.40	2	.55	.65

#### Wrought Iron



No. 414

Size In.	Actual O. D. In.	Length Coupling In.	PRICE, EACH			
			BLACK		GALVANIZED	
			R. H.	R. and L.	R. H.	R. and L.
1/2	1 1/8	1 7/8	\$.14	\$.20	\$.20	\$.25
3/4	1 1/8	2 1/8	.20	.30	.25	.35
1	1 3/8	2 3/8	.26	.40	.32	.45
1 1/4	2 1/8	2 1/8	.34	.45	.42	.55
1 1/2	2 5/8	2 7/8	.42	.55	.55	.70
2	2 5/8	3 1/8	.56	.70	.75	.90

### Cast Steel Screwed Fittings

#### Series 30

For Working Pressures: Steam or Hot Oil to 750° F., 2 1/2 to 6-Inch, 400 Pounds; 8 to 12-Inch, 300 Pounds; Oil or Oil Vapor to 900° F., 2 1/2 to 6-Inch, 375 Pounds; 8 to 12-Inch, 275 Pounds; Cold Oil, Gas and Water, 2 1/2 to 12-Inch, 800 Pounds; Tested to 800 Pounds Hydraulic Pressure

#### No. 760D 45° Elbows



Size In.	Each	Size In.	Each	Size In.	Each
2 1/2	\$4.75	5	\$13.50	10	\$61.00
3	6.00	6	16.50	12	92.00
3 1/2	7.75	7	31.00	..	....
4	8.50	8	34.00	..	....

#### No. 762D 45° Elbows

Size In.	Each	Size In.	Each	Size In.	Each
2 1/2	\$4.75	4	\$8.50	8	\$34.00
3	6.00	5	13.50	10	61.00
3 1/2	7.75	6	16.50	12	92.00



#### No. 764D Tees



Size In.	Each	Size In.	Each	Size In.	Each
2 1/2	\$7.10	5	\$20.25	10	\$91.00
3	9.00	6	25.00	12	138.00
3 1/2	11.50	7	47.00	..	....
4	12.75	8	51.00	..	....

#### No. 766D Crosses

Size In.	Each	Size In.	Each	Size In.	Each
2 1/2	\$9.50	4	\$17.00	8	\$68.00
3	12.00	5	27.00	10	122.00
3 1/2	15.50	6	33.00	12	184.00



Reducers and reducing fittings, prices upon application.

### Heavy Cast Steel Screwed Fittings

Working Pressure Ratings, 600 Pounds Steam and Any Total Temperature Up to 750° F.; 550 Pounds Oil or Vapor Pressure and Temperature Up to 900° F.; 2000 Pounds Cold Oil, Gas or Water Working Pressure Tested to 2500 Pounds Hydraulic Pressure

#### No. 260D Elbows



Size Inches	Each	Size Inches	Each
2 1/2	\$4.75	6	\$16.50
3	6.00	7	31.00
3 1/2	7.75	8	34.00
4	8.50	10	61.00
5	13.50	12	92.00

#### No. 262D 45° Elbows

Size Inches	Each	Size Inches	Each	Size Inches	Each
2 1/2	\$4.75	4	\$8.50	8	\$34.00
3	6.00	5	13.50	10	61.00
3 1/2	7.75	6	16.50	12	92.00

#### No. 264D Tees

Size Inches	Each	Size Inches	Each
2 1/2	\$7.10	6	\$25.00
3	9.00	7	47.00
3 1/2	11.50	8	51.00
4	12.75	10	91.00
5	20.25	12	138.00



#### No. 266D Crosses



Size Inches	Each	Size Inches	Each
2 1/2	\$9.50	6	\$33.00
3	12.00	8	68.00
3 1/2	15.50	10	122.00
4	17.00	12	184.00
5	27.00	..	....



## Drop Forged Steel Screwed Fittings

All of these fittings are bored out of solid forgings and tapped accurate to gauge, using the highest quality of high speed steel taps.

## 90° Elbows



—PRICE, EACH— FOR WORKING PRESSURE			—PRICE, EACH— FOR WORKING PRESSURE		
3001 to 10000			3001 to 10000		
Size In.	3000 Lbs.	10000 Lbs.	Size In.	3000 Lbs.	10000 Lbs.
1/4	\$.55	\$.55	1 1/2	\$1.50	\$1.90
3/8	.55	.65	2	1.90	2.90
1/2	.65	.75	2 1/2	2.90	5.00
3/4	.75	.90	3	5.00	12.50
1	.90	1.20	3 1/2	12.50	*12.50
1 1/4	1.20	1.50	4	12.50	.....

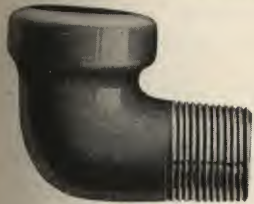
## 45° Elbows

—PRICE, EACH— FOR WORKING PRESSURE			—PRICE, EACH— FOR WORKING PRESSURE		
3001 to 10000			3001 to 10000		
Size In.	3000 Lbs.	10000 Lbs.	Size In.	3000 Lbs.	10000 Lbs.
1/4	\$.68	\$.68	1 1/2	\$1.80	\$2.28
3/8	.68	.78	2	2.28	3.48
1/2	.78	.90	2 1/2	3.48	6.00
3/4	.90	1.08	3	6.00	14.00
1	1.08	1.44	3 1/2	14.00	*14.00
1 1/4	1.44	1.80	4	14.00	.....



No. 2001

## Street Elbows



No. 1801

Size In.	Price, Each for 3000 Pounds Working Pressure
1/4	\$.75
3/8	.85
1/2	.85
3/4	1.05
1	1.40
1 1/4	2.00

## Tees

—PRICE, EACH— FOR WORKING PRESSURE		
3001 to 10000		
Size Inches	3000 Pounds	10000 Pounds
1/4	\$.80	\$.80
3/8	.80	.95
1/2	.95	1.10
3/4	1.10	1.35
1	1.35	1.75
1 1/4	1.75	2.30
1 1/2	2.30	2.90
2	2.90	4.40
2 1/2	4.40	7.50
3	7.50	17.00
3 1/2	17.00	*17.00
4	17.00	.....



No. 244

## Crosses



No. 1900

—PRICE, EACH— FOR WORKING PRESSURE		
3001 to 10000		
Size In.	3000 Pounds	10000 Pounds
1/4	\$1.10	\$1.10
3/8	1.10	1.30
1/2	1.30	1.50
3/4	1.50	1.90
1	1.90	2.80
1 1/4	2.80	3.50
1 1/2	3.50	5.00
2	5.00	7.30
2 1/2	7.30	10.00
3	10.00	23.00
3 1/2	23.00	*23.00
4	23.00	.....

\*For pressure up to 5000 pounds only.

As the fittings are bored out of solid forgings, it is possible to furnish reducing sizes promptly. For reduced fittings, add 15 per cent extra.

## Elmes Hydraulic Steel Bushings and Plugs

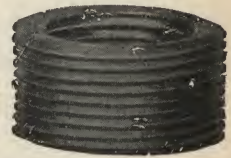
## No. 1974 Hexagon Bushings



Size Inches
1/2
3/4
1
1 1/4
1 1/2
2 x 3/4 and Less
2 x 1 and More
2 1/2 x 1 1/4 and Less
2 1/2 x 1 1/2 and More
3 x 1 1/2 and Less
3 x 2 and More

## No. 1975 Flush Bushings

Size Inches
3/8 x 1/4
1/2 x 3/8
3/4 x 1/2
1 x 3/4
1 1/4 x 1
1 1/2 x 1 1/4
2 x 1 1/2
2 1/2 x 2



## No. 1976 Plugs



Size Inches	Size Inches	Size Inches
1/4	1	2 1/2
3/8	1 1/4	3
1/2	1 1/2	...
3/4	2	...

Prices and further information upon application.

## No. 239 H Malleable Iron Hydraulic Flange Unions

## Tongue and Groove—With Gasket

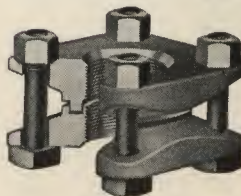
1/4 to 2-inch, 2000 Pounds Hydrostatic Working Pressure  
2 1/2 to 4-inch, 1000 Pounds Hydrostatic Working Pressure

Size In.	O. D. In.	No. Bolts	Price Each
1/4	3	2	\$1.35
3/8	3 3/8	2	1.35
1/2	3 1/2	2	1.50
3/4	3 3/8	4	1.50
1	3 7/8	4	1.50
1 1/4	4 5/8	4	1.75
1 1/2	5 5/8	4	2.25
2	6 1/4	4	3.00
2 1/2	6 3/4	4	6.00
3	7 7/8	4	9.00
3 1/2	8 7/8	4	11.50
4	9	6	14.00

## No. 1589 Flange Unions for Ammonia

For Working Pressures up to 300 Pounds

1/4 to 3-Inch, Forged Steel  
3 1/2 to 6-Inch, Malleable Iron  
7 to 12-Inch, Ferrostee



Square

Oval			
Size Inches	Price Each	Size Inches	Price Each
1/4	\$.90	1/2	\$1.20
3/8	1.00	3/4	1.55
Square			
1	\$2.15	2	\$3.10
1 1/4	2.25	2 1/2	5.50
1 1/2	2.70	...	.....
Round			
3	\$6.75	7	\$16.00
3 1/2	7.75	8	20.00
4	9.25	10	28.00
5	11.00	12	40.00
6	13.75	...	.....



## Malleable Iron Ammonia Fittings

Screwed, with Soldering Recess



No. 1530, Elbow

No. 1534, Tee

No. 1538, Cross

For working pressures up to 300 pounds. Air tested.  
Hydraulic pattern.

Reducing sizes elbows, tees and crosses will be furnished at 15 per cent advance over straight sizes.

Size Inches	EACH					No. 1540 *Solid Plugs
	No. 1530 Elbows	No. 1532 45° Elbows	No. 1534 Tees	No. 1538 Crosses	No. 1539 Reducers	
1/4	\$ .20	\$ .25	\$ .30	\$ .60	....	\$ .04
3/8	.25	.30	.40	.80	.25	.04
1/2	.30	.35	.45	.90	.28	.04
3/4	.35	.42	.50	1.00	.30	.06
1	.40	.50	.60	1.20	.40	.08
1 1/4	.55	.65	.80	1.60	.45	.09
1 1/2	.70	.85	1.05	2.10	.55	.11
2	.90	1.10	1.35	2.70	.70	.15
2 1/2	1.50	1.85	2.25	4.50	1.30	.27
3	2.40	2.85	3.60	7.20	2.25	.38
3 1/2	3.25	4.00	5.00	10.00	....	.57
4	4.25	5.00	6.50	13.00	....	.63
5	6.50	....	9.75	19.50	....	1.35
6	9.50	....	14.25	28.50	....	1.80

\*Cast iron.

No. 1562 Malleable Iron Return Bends  
for Ammonia  
Screwed with Soldering Recess

Size In.	Center to Center In.	Price Each	Size In.	Center to Center In.	Price Each
1	1 3/4	\$ .60	1 1/2	3	\$1.15
1	2 1/2	.75	1 1/2	6	1.75
1	3	.85	1 1/2	8	2.00
1 1/4	2 1/4	.90	2	3	1.25
1 1/4	2 1/2	.95	2	3 1/2	1.30
1 1/4	3	1.00	2	4	1.90
1 1/4	3 1/2	1.15	2	4 5/8	2.25
1 1/4	4	1.20	2	6	3.25
1 1/4	6	1.55	2	8	3.50

## XX Hydraulic Couplings for Ammonia



Size In.	O. D. In.	Length In.	Threads to Inch of Screw Inches	Weight Lbs.	PRICE, EACH	
					Plain	Recessed Plain
3/4	1.66	2.31	14	.70	\$ .40	\$ .50
1	1.90	2.63	11 1/2	1.12	.55	.65
1 1/4	2.22	2.88	11 1/2	1.50	.70	.85
1 1/2	2.44	3.13	11 1/2	1.88	.85	1.00
2	3.19	3.38	11 1/2	3.55	1.15	1.30
2 1/2	3.62	3.63	8	4.50	1.60	1.85

Ferrosteel Flanged Elbows, Tees and  
Crosses

For Ammonia, Air, Gas, Chemicals, Etc.

For Working Pressures Up to 300 Pounds

Tongue and Groove Ends



No. 1521 Elbow, Square Flanges

No. 1523 Tee, Square Flanges

Fittings will be furnished with companion flanges, gaskets and bolts unless otherwise specified.

## Oval Flanges

Size Inches	PRICE, EACH			PRICE, EACH		
	WITHOUT COMPANION FLANGES			WITH COMPANION FLANGES		
	No. 1521 Elbows	No. 1523 Tees	No. 1527 Crosses	No. 1521 Elbows	No. 1523 Tees	No. 1527 Crosses
1/4	\$1.00	\$1.50	\$1.75	\$2.00	\$2.75	\$3.60
3/8	1.25	1.75	2.40	2.40	3.10	4.25
1/2	1.40	1.95	2.50	2.45	3.50	4.75
3/4	1.75	2.20	3.00	2.75	4.25	5.30

## Square Flanges

1	\$2.00	\$2.50	\$3.30	\$3.50	\$4.75	\$5.80
1 1/4	2.25	3.70	4.95	4.75	7.50	9.95
1 1/2	2.50	3.75	5.00	5.00	7.55	10.00
2	3.00	4.00	6.00	6.00	8.00	11.50
2 1/2	5.50	8.00	10.00	11.00	15.00	18.25

## Round Flanges

3	\$10.00	\$17.00	\$23.00	\$13.50	\$26.00	\$31.00
3 1/2	13.50	21.00	26.00	17.00	31.00	37.00
4	15.00	23.50	30.00	21.00	34.50	44.00
5	20.00	29.00	38.00	28.50	43.00	53.00
6	30.00	36.00	47.00	40.00	53.00	65.00
7	42.00	50.00	65.00	55.00	70.00	90.00
8	55.00	65.00	85.00	70.00	95.00	125.00
10	70.00	85.00	110.00	90.00	130.00	165.00
12	95.00	120.00	150.00	115.00	170.00	220.00

## No. 1586 1/2 All-Iron Safety Gauges

With Automatic Gauge Valves

For Ammonia, Air, Gas, Chemicals, Etc.

Working Pressures up to 300 Pounds

The construction of these gauge valves is such that should the glass tube be broken, the valves instantly and automatically close, allowing the installation of a new glass and preventing loss or danger from escaping ammonia.

Furnished complete with glass tube and guard, 15-inch centers.

Size.....inches 1/2 3/4  
No. 1586 1/2.....each \$12.50 15.00

Over 15-inch centers and up to 24-inch centers, inclusive, add 25 cents per inch.

## Extra Parts

The glass in these gauges is 5/16-inch outside diameter.

Size.....inches 1/2 3/4		
Guard.....each	\$4.50	\$4.50
Glass.....each	.20	.25
Valve.....each	5.00	6.50
Gauge Glass Washers.....per dozen net	1.12	1.12



**All-Iron Globe and Angle Valves**

Ferrosteel with Special Metal Discs  
Screwed Ends

For 300 Pounds Working Pressure

For ammonia, air,  
gas, chemicals, etc.



No. 1504  
Globe

Size Inches	PRICE, EACH	
	No. 1504 Globe	No. 1505 Angle
1/4	\$3.50	\$3.50
3/8	4.50	4.50
1/2	5.00	5.00
3/4	5.50	5.50
1	6.00	6.00
1 1/4	7.50	7.50
1 1/2	9.00	9.00
2	12.00	12.00
2 1/2	16.00	16.00
3	21.00	21.00



No. 1505  
Angle

**All-Iron Globe and Angle Expansion Valves**

Ferrosteel with Needle Point Discs  
Rising Stem—Screwed Ends

For 300 Pounds Pressure

For ammonia, air,  
gas, chemicals and other  
services where all-iron  
construction is desirable.



No. 1519 1/2  
Globe

Size In.	Center to End In.	Price Each
1/4	2 1/4	\$4.75
3/8	2 3/8	5.50
1/2	2 1/2	6.00
3/4	2 3/4	6.80
1	3 1/8	7.50



No. 1519 1/4 Angle

**All-Iron Globe and Angle Expansion Valves**

Ferrosteel with Special Metal Needle Point Discs  
For Ammonia, Air, Gas, Chemicals and Other Services  
Where All-Iron Construction Is Desirable

Non-Rising Stem Tongue and Groove Ends

For 300 Pounds Working Pressure



No. 1511, Globe

Flanged valves will  
be furnished com-  
plete with compan-  
ion flanges, gaskets  
and bolts unless oth-  
erwise specified.



No. 1515, Angle

Size Inches	PRICE, EACH			
	WITHOUT COMPANION FLANGES BOLTS AND GASKETS		WITH COMPANION FLANGES BOLTS AND GASKETS	
	No. 1511 Globe	No. 1515 Angle	No. 1511 Globe	No. 1515 Angle
1/4	\$6.00	\$6.00	\$7.50	\$7.50
3/8	6.50	6.50	8.00	8.00
1/2	7.00	7.00	8.50	8.50
3/4	8.00	8.00	9.50	9.50
1	9.00	9.00	11.00	11.00

**All-Iron Ferrosteel Horizontal and Angle Check Valves**

For Ammonia, Air, Gas, Chemicals and Other  
Services Where All-Iron Construction is Desirable

For Working Pressures up to 300 Pounds

Tongue and Grooved Ends



No. 1507 Horizontal, without Lifting Stem



No. 1508 1/2 Horizontal  
with Lifting Stem



No. 1509, Angle

Lifting stems are not applicable to the angle check valves.  
Check valves sizes larger than 6 inches, made to order;  
prices upon application.

Valves will be furnished complete with companion flanges,  
gaskets and bolts, unless otherwise specified.

**Oval Flanges**

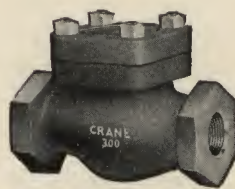
Size Inches	PRICE, EACH— WITHOUT COMPANION FLANGES BOLTS AND GASKETS			WITH COMPANION FLANGES BOLTS AND GASKETS		
	No. 1507 Horiz.	No. 1509 Angle	No. 1508 1/2 Horiz.	No. 1507 Horiz.	No. 1509 Angle	No. 1508 1/2 Horiz.
1/2	\$8.70	\$8.70	.....	\$10.05	\$10.05	.....
3/4	10.00	10.00	.....	11.30	11.30	.....

**Square Flanges**

1	\$11.20	\$11.20	\$18.70	\$13.05	\$13.05	\$20.55
1 1/4	18.50	18.50	26.00	21.25	21.25	28.75
1 1/2	19.80	19.80	27.30	22.55	22.55	30.05
2	23.50	23.50	31.00	27.20	27.20	34.70
2 1/2	34.70	34.70	42.20	40.20	40.20	47.70

**Round Flanges**

3	\$53.50	\$53.50	\$61.00	\$62.80	\$62.80	\$70.30
3 1/2	68.40	68.40	82.40	79.80	79.80	93.80
4	89.00	89.00	103.00	102.30	102.30	116.30
5	127.00	127.00	141.00	143.65	143.65	157.65
6	170.00	170.00	184.00	192.15	192.15	206.15

**Screwed Ends**

No. 1507 1/2 Horizontal  
without Lifting Stem



No. 1508 1/2, Angle

Size Inches	PRICE, EACH			
	No. 1506 1/2 Horizontal with Lifting Stem	WITHOUT LIFTING STEM—		
		No. 1507 1/2 Horizontal	No. 1509 1/2 Angle	
1/2	.....	\$6.80	\$6.80	
3/4	.....	7.25	7.25	
1	\$12.65	8.00	8.00	
1 1/4	15.40	10.75	10.75	
1 1/2	17.05	12.40	12.40	
2	20.05	15.40	15.40	

When you strike a hard proposition,  
something the other fellow turns down,  
that is what we are looking for.



## Stockham Cast Iron Sprinkler Fittings

### For Fire Protection Service

Stockham Sprinkler Fittings are made in accordance with requirements of the National Fire Protection Association and are known as American Standard Sprinkler Fittings, being made to specifications, of the American Standards Association. They also have the approval of the Associated Factory Mutual Fire Insurance Companies and of the Underwriters' Laboratories.

Screwed, flanged and combination screwed and flanged fittings all have the same center to face dimensions.

Reducing fittings are not made regularly with the reduced opening less than one-half the nominal pipe size of the largest opening of the fitting.

Fittings specified one end flanged, will be furnished with the largest opening flanged.

In ordering tees and crosses, the run is specified first, then the outlet or outlets.

Stockham Standard-Weight Sprinkler Fittings are marked SA-29 Stockham W-150, and the flanges are faced and drilled according to the 1928 American Standard for standard flanges and flanged fittings.

Stockham Extra Heavy Sprinkler Fittings are marked: SA-29 Stockham W-250, and the flanges are faced and drilled according to the 1928 American Standard for extra heavy flanges and flanged fittings.

## Standard Cast Iron Sprinkler Fittings

### For Water Working Pressures Up to 150 Pounds



Style A,—S-S

Style B,—F-S

Style C,—F-F

Style D,—S-S



Style E,—F-F

Style G,—S-S-S

Style H,—F-S-S

Style K,—S-S-F

S-S, F-S, etc., under illustrations signify Screwed-Screwed, Flanged-Screwed, etc., in the order in which the sizes of openings are named, and offer a convenient method to use in ordering.

### Price, Each

Size.....inches	2 1/2	3	3 1/2
A, Elbows (Screwed).....	\$1.20	\$2.25	\$3.25
B, Elbows (Flanged and Screwed)...	5.50	6.00	6.50
C, Elbows (Flanged).....	6.75	7.50	8.50
D, Elbows (Screwed Base).....		8.00	
*E, Elbows (Flanged Base).....			
G, Tees (Screwed).....	2.40	4.50	6.50
G, Tees, Reducing (Screwed).....	3.60	6.75	9.75
H, Tees (Flanged-Screwed-Screwed).....	9.00	10.00	11.00
K, Tees (Screwed-Screwed-Flanged).....	9.00	10.00	11.00
Size.....inches	4	5	6
A, Elbows (Screwed).....	\$3.50	\$6.50	\$8.75
B, Elbows (Flanged and Screwed)...	7.50	10.00	14.00
C, Elbows (Flanged).....	10.00	12.50	17.50
D, Elbows (Screwed Base).....	11.00	15.00	18.00
*E, Elbows (Flanged Base).....			
G, Tees (Screwed).....	7.00	13.00	17.50
G, Tees, Reducing (Screwed).....	10.50	19.50	26.25
H, Tees (Flanged-Screwed-Screwed).....	12.00	15.00	22.00
K, Tees (Screwed-Screwed-Flanged).....	12.00	15.00	22.00

\*Made to order; prices on request.

Galvanized at double the above list prices.

Bases of base elbows not faced or drilled unless specified.

Tapped bosses can be furnished for any specifications.

## Standard Cast Iron Sprinkler Fittings

### For Water Working Pressures up to 150 Pounds



Style L—F-S-F

Style M—F-F-S

Style N—F-F-F

Style O—S-S-S-S



Style P—F-S-S-S



Style R—F-F-S-S



Style S—F-F-F-F

S-S, F-S, etc., under illustrations signify Screwed-Screwed, Flanged-Screwed, etc., in the order in which the sizes of openings are named.

Size.....inches	2 1/2	3	3 1/2
L, Tees (Flanged-Screwed-Flanged)...	\$9.00	\$10.00	\$11.00
M, Tees (Flanged-Flanged-Screwed)...	9.00	10.00	11.00
N, Tees (Flanged).....	10.00	11.50	13.00
O, Crosses (Screwed).....	3.20	6.00	8.75
P, Crosses (Flgd.-Serd.-Serd.-Serd.)...	12.50	13.50	15.00
R, Crosses (Flgd.-Flgd.-Serd.-Serd.)...	12.50	13.50	15.00
S, Crosses (Flanged).....	13.50	15.00	17.00
Size.....inches	4	5	6
L, Tees (Flanged-Screwed-Flanged)...	\$12.00	\$15.00	\$22.00
M, Tees (Flanged-Flanged-Screwed)...	12.00	15.00	22.00
N, Tees (Flanged).....	15.00	18.00	26.00
O, Crosses (Screwed).....	9.50	17.50	24.00
P, Crosses (Flgd.-Serd.-Serd.-Serd.)...	17.00	22.00	30.00
R, Crosses (Flgd.-Flgd.-Serd.-Serd.)...	17.00	22.00	30.00
S, Crosses (Flanged).....	20.00	25.00	35.00

Galvanized at double the above list prices.

Tapped bosses can be furnished for any specifications.

## Extra Heavy Cast Iron Sprinkler Fittings

### For Water Working Pressures up to 250 Pounds

### Price, Each

Size.....inches	2 1/2	3	3 1/2
A, Elbows (Screwed).....	\$2.40	\$4.50	\$6.50
B, Elbows (Flanged-Screwed).....	11.00	12.00	13.00
C, Tees (Screwed).....	4.80	9.00	13.00
G, Tees, Reducing (Screwed).....	7.20	13.50	19.50
H, Tees (Flanged-Screwed-Screwed)...	18.00	20.00	22.00
K, Tees (Screwed-Screwed-Flanged)...	18.00	20.00	22.00
L, Tees (Flanged-Screwed-Flanged)...	18.00	20.00	22.00
N, Tees (Flanged).....	20.00	23.00	26.00
Size.....inches	4	5	6
A, Elbows (Screwed).....	\$7.00	\$13.00	\$17.50
B, Elbows (Flanged-Screwed).....	15.00	20.00	28.00
G, Tees (Screwed).....	14.00	26.00	35.00
G, Tees, Reducing (Screwed).....	21.00	39.00	52.50
H, Tees (Flanged-Screwed-Screwed)...	24.00	30.00	44.00
K, Tees (Screwed-Screwed-Flanged)...	24.00	30.00	44.00
L, Tees (Flanged-Screwed-Flanged)...	24.00	30.00	44.00
N, Tees, (Flanged).....	30.00	36.00	52.00

For galvanized add 50% to the above prices.

Facing and drilling are included in the above prices.

Where prices are not shown quotations will be made upon request.

Drilling templates for flanges of these fittings correspond to the 1928 American Standard for extra heavy flanges and flanged fittings.

### Dimensions

Screwed, flanged and combination screwed and flanged fittings all have the same center to face dimensions in any given size.



## Standard Flanged Fittings

## Explanatory Notes on the American Standard

Effective January 1, 1928

All standard weight fittings are recommended for steam working pressures up to 125 pounds, and are marked 125.

For convenience in determining the approximate or admissible water working pressures to which valves and fittings may be subjected, proportionate to or based on the designated steam working pressures, we suggest the following conservative rule to use when the water working pressure is not given on the catalogue page, although a much greater range may be safely used with comparatively small sizes of valves and fittings.

Low pressure, standard and medium valves and fittings will stand a water working pressure 40 per cent greater than the steam working pressure on sizes 12 inch and smaller; and sizes 14 inch and larger will stand 20 per cent greater water working pressure than the rated steam working pressure.

All standard weight fittings and flanges have plain faces.

Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

Bolt holes straddle center line.

Square head bolts with hexagonal nuts are recommended.

For bolts,  $1\frac{1}{8}$ -inches diameter and larger, studs with a nut on each end are satisfactory.

Hexagonal nuts for pipe sizes 1-inch to 46 inches, can be conveniently pulled up with open wrenches of minimum design of heads. Hexagonal nuts for pipe sizes 48 inches to 100 inches on 125 pound fittings can be conveniently pulled up with box wrenches.

Size of all fittings scheduled indicates inside diameter of ports.

Standard reducing elbows carry the same dimensions center to face as regular elbows of largest straight size.

Angle elbows and special angle fittings from  $1^\circ$  to  $45^\circ$ , use center to face dimensions given for regular  $45^\circ$  elbows, and fittings over  $45^\circ$ , use center to face dimensions given for regular  $90^\circ$  elbows.

Where long radius fittings are specified, it has reference only to elbows which are made in 2 center to face dimensions known as elbows and long radius elbows, the latter being used only when so specified.

Double branch elbows, whether straight or reducing, carry the same dimensions center to face and face to face as regular straight size elbows and tees.

Side outlet elbows and side outlet tees, whether straight or reducing sizes, carry the same dimensions center to face and face to face as regular tees having the same reductions.

Bull head tees or tees increasing on outlet, will have same center to face and face to face dimensions as a straight fitting of the size of the outlet.

Double sweep tees are not made reducing on the run.

Standard tees, crosses and laterals, reducing on run only, carry same dimensions face to face as largest straight size.

Fittings size 18 inches and larger, reducing on the outlet or branch are made in 2 lengths, depending on the size of the outlet as given in the table of dimensions.

The dimensions of reducing flanged fittings always are regulated by the reductions of the outlet or branch. Fittings reducing on the run only, the long body pattern will always be used.

The face to face dimensions of reducers are the same for either straight or eccentric pattern.

"Y's" are special and are made to suit conditions.

## Extra Heavy Flanged Fittings

## Explanatory Notes on the American Standard

Effective January 1, 1928

All extra heavy cast iron flanged fittings are recommended for saturated steam working pressures up to 250 pounds, and all extra heavy ferrostee flanged fittings are recommended for saturated or superheated steam pressures up to 250 pounds with a total temperature not exceeding  $500^\circ$  Fahrenheit.

For convenience in determining the approximate or admissible water working pressures to which valves and fittings may be subjected, proportionate to or based on the designated steam working pressures, we suggest the following conservative rule to use when the water working pressure is not given on the catalogue page, although a much greater range may be safely used with comparatively small sizes of valves and fittings.

Material rated for 250 pounds steam working pressure and usually designated as extra heavy, will stand a water, oil or gas working pressure of 400 pounds on size 8 inch and smaller, and 350 pounds on sizes 9 inch and larger.

All extra heavy cast iron and ferrostee flanged fittings are marked 250.

All ferrostee fittings have the letters "F.S." cast on to distinguish the cast iron from the ferrostee fittings.

All extra heavy ferrostee flanged fittings, except laterals, are tested to 800 pounds hydraulic pressure. Laterals are tested to 600 pounds hydraulic pressure.

All extra heavy fittings and flanges have a raised surface, for gaskets,  $\frac{1}{16}$  inch high inside of bolt holes.

The bolt holes are drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts and straddle the center line.

The bolt holes on extra heavy cast iron and ferrostee flanged fittings will not be spot faced unless so ordered, for which an extra charge will be made.

All extra heavy flanged fittings ordered to comply with the A.S.M.E. boiler code are furnished spot faced.

Square head bolts with hexagonal nuts are recommended.

For bolts  $1\frac{1}{8}$  inches diameter and larger, studs with a nut on each end are satisfactory.

Hexagonal nuts for pipe sizes 1 inch to 16 inches can be conveniently pulled up with open wrenches of minimum design of heads.

Hexagonal nuts for pipe sizes 18 inches to 48 inches can be conveniently pulled up with box wrenches.

Extra heavy reducing elbows carry the same dimensions center to face as regular elbows of largest straight size.

Angle elbows and special angle fittings from  $1^\circ$  to  $45^\circ$ , use center to face dimensions given for regular  $45^\circ$  elbows, and fittings over  $45^\circ$ , use center to face dimensions given for regular  $90^\circ$  elbows.

Where long radius fittings are specified, it has reference only to elbows which are made in two center to face dimensions known as elbows and long radius elbows, the latter being used only when so specified.

Double branch elbows, whether straight or reducing, carry same dimensions center to face and face to face as regular straight size elbows and tees.

Side outlet elbows and side outlet tees, whether straight or reducing sizes carry the same dimensions center to face and face to face as regular tees having same reductions.

Bull head tees or tees increasing on outlet will have the same center to face and face to face dimensions as a straight fitting of the size of the outlet.

Double sweep tees are not made reducing on the run.

Extra heavy tees, crosses and laterals, reducing on the run only, carry same dimensions face to face as largest straight size.

Tees, crosses and laterals 16 inches and smaller, reducing on the outlet or branch, use the same dimensions as straight sizes of the larger port.

Fittings 18 inches and larger, reducing on the outlet or branch, are made in 2 lengths depending on the size of the outlet as given in the table of dimensions.

The dimensions of reducing flanged fittings are always regulated at the reductions of the outlet or branch. Fittings reducing on the run only, the long body pattern will always be used.

The face to face dimensions of reducers is the same for either straight or eccentric pattern.

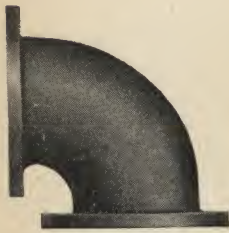
"Y's" are special and are made to suit conditions.



## Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure

## 90° Elbows



No. 500

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 $\frac{1}{4}$	4 $\frac{5}{8}$	3 $\frac{3}{4}$	\$3.00	\$3.60
1 $\frac{1}{2}$	5	4	3.00	3.60
2	6	4 $\frac{1}{2}$	3.00	3.60
2 $\frac{1}{2}$	7	5	3.15	3.75
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	3.45	4.15
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	4.05	4.90
4	9	6 $\frac{1}{2}$	4.50	5.50
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	5.50	6.50
5	10	7 $\frac{1}{2}$	6.25	7.25
6	11	8	7.60	8.90
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	10.50	12.00
8	13 $\frac{1}{2}$	9	12.00	13.60
9	15	10	17.00	19.25
10	16	11	19.00	21.70
12	19	12	28.00	31.00
14	21	14	41.50	45.25
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	47.00	51.50
16	23 $\frac{1}{2}$	15	54.50	59.50
18	25	16 $\frac{1}{2}$	71.00	77.00
20	27 $\frac{1}{2}$	18	90.00	97.00
22	29 $\frac{1}{2}$	20	113.00	122.00
24	32	22	140.00	150.00

Larger sizes made to order. Prices upon application.

## 45° Elbows

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.



No. 501

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 $\frac{1}{4}$	4 $\frac{5}{8}$	2	\$3.30	\$3.90
1 $\frac{1}{2}$	5	2 $\frac{1}{4}$	3.30	3.90
2	6	2 $\frac{1}{2}$	3.30	3.90
2 $\frac{1}{2}$	7	3	3.50	4.10
3	7 $\frac{1}{2}$	3	3.80	4.50
3 $\frac{1}{2}$	8 $\frac{1}{2}$	3 $\frac{1}{2}$	4.50	5.35
4	9	4	5.00	6.00
4 $\frac{1}{2}$	9 $\frac{1}{4}$	4	6.00	7.00
5	10	4 $\frac{1}{2}$	6.90	7.90
6	11	5	8.35	9.65
7	12 $\frac{1}{2}$	5 $\frac{1}{2}$	11.00	12.50
8	13 $\frac{1}{2}$	5 $\frac{1}{2}$	12.60	14.20
9	15	6	17.75	20.00
10	16	6 $\frac{1}{2}$	20.00	22.70
12	19	7 $\frac{1}{2}$	29.50	32.50
14	21	7 $\frac{1}{2}$	41.50	45.25
15	22 $\frac{1}{4}$	8	47.00	51.50
16	23 $\frac{1}{2}$	8	54.50	59.50
18	25	8 $\frac{1}{2}$	71.00	77.00
20	27 $\frac{1}{2}$	9 $\frac{1}{2}$	90.00	97.00
22	29 $\frac{1}{2}$	10	113.00	122.00
24	32	11	140.00	150.00

Larger sizes made to order. Prices upon application.

## Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

## Long Radius Elbows



No. 503

All standard weight fittings have plain faces. Bolt holes will be drilled  $\frac{1}{8}$ -inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diam. Flanges Inches	Center to Face Inches	Radius Inches	PRICE, EACH	
				Faced Only	Faced and Drilled
2	6	6 $\frac{1}{2}$	5 $\frac{1}{4}$	\$5.00	\$5.90
2 $\frac{1}{2}$	7	7	5 $\frac{5}{8}$	5.25	6.15
3	7 $\frac{1}{2}$	7 $\frac{3}{4}$	6 $\frac{1}{4}$	5.75	6.85
3 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	6 $\frac{7}{8}$	6.75	8.00
4	9	9	7 $\frac{3}{8}$	7.50	9.00
4 $\frac{1}{2}$	9 $\frac{1}{4}$	9 $\frac{1}{2}$	7 $\frac{3}{4}$	9.25	10.75
5	10	10 $\frac{1}{4}$	8 $\frac{1}{2}$	10.50	12.00
6	11	11 $\frac{1}{2}$	9 $\frac{5}{8}$	12.65	14.60
7	12 $\frac{1}{2}$	12 $\frac{3}{4}$	10 $\frac{7}{8}$	17.50	19.75
8	13 $\frac{1}{2}$	14	12	20.00	22.40
9	15	15 $\frac{1}{4}$	13	28.50	31.85
10	16	16 $\frac{1}{2}$	14 $\frac{1}{8}$	31.50	35.50
12	19	19	16 $\frac{1}{2}$	46.50	51.00
14	21	21 $\frac{1}{2}$	18 $\frac{7}{8}$	69.00	74.50
15	22 $\frac{1}{4}$	22 $\frac{3}{4}$	20	78.00	84.75
16	23 $\frac{1}{2}$	24	21 $\frac{1}{4}$	91.00	98.50
18	25	26 $\frac{1}{2}$	32 $\frac{3}{8}$	118.00	127.00
20	27 $\frac{1}{2}$	29	26	150.00	160.00
22	29 $\frac{1}{2}$	31 $\frac{1}{2}$	28 $\frac{3}{4}$	190.00	203.00
24	32	34	30 $\frac{3}{4}$	235.00	250.00

Larger sizes made to order. Elbows of different dimensions from above furnished on order at special prices.

## Round Base Elbows

The measurement across the flat edges of square base flange is the same as the diameter of the round base flange.

All standard weight fittings have plain faces. Bolt holes will be drilled  $\frac{1}{8}$ -inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, except base, as quoted unless otherwise ordered.



No. 504

Size Inches	Diameter *Flanges Inches	Center to Face Inches	Diam. Base Flange Inches	PRICE, EACH		
				Faced Only	Faced and Drilled	For Facing and Drilling Base Flange
4	9	6 $\frac{1}{2}$	6	\$9.00	\$10.00	\$3.00
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	6	11.00	12.00	3.00
5	10	7 $\frac{1}{2}$	7	12.50	13.50	3.50
6	11	8	7	15.25	16.55	3.50
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	7	21.00	22.50	3.50
8	13 $\frac{1}{2}$	9	9	24.00	25.60	5.00
9	15	10	9	34.00	36.25	5.00
10	16	11	9	38.00	40.70	5.00
12	19	12	11	56.00	59.00	7.50
14	21	14	11	70.00	73.75	7.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	11	80.00	84.50	7.50
16	23 $\frac{1}{2}$	15	11	90.00	95.00	7.50
18	25	16 $\frac{1}{2}$	13 $\frac{1}{2}$	105.00	111.00	12.00
20	27 $\frac{1}{2}$	18	13 $\frac{1}{2}$	120.00	127.00	12.00
22	29 $\frac{1}{2}$	20	13 $\frac{1}{2}$	150.00	159.00	12.00
24	32	22	13 $\frac{1}{2}$	190.00	200.00	12.00

\*Port openings only, not base flange.

## Base Tees

Base tees made on special order. Prices upon application.



## Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

## Reducing Taper Elbows



No. 502

Standard reducing elbows carry the same dimensions, center to face, as regular elbows of largest straight size.

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than diameter of bolts.

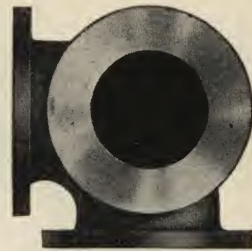
Size of all fittings scheduled indicates inside diameter of ports.

Flanged fittings will be furnishing faced only, unless otherwise specified.

## Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure

## Straight Side Outlet Elbows



No. 505

All standard weight fittings have plain faces. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

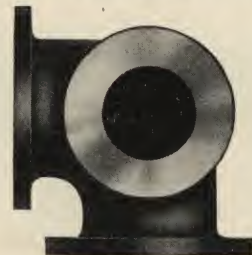
Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	9	6 $\frac{1}{2}$	\$26.50	\$28.00
5	10	7 $\frac{1}{2}$	28.50	30.00
6	11	8	33.00	35.00
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	40.25	42.50
8	13 $\frac{1}{2}$	9	47.50	50.00
10	16	11	76.00	80.00
12	19	12	100.50	105.00
14	21	14	129.50	135.00
16	23 $\frac{1}{2}$	15	152.50	160.00

Larger sizes made to order. Prices upon application.

## Reducing Side Outlet Elbows



No. 506

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Side outlet elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular tees having same reductions.

Side outlet elbows, whether straight or reducing, are furnished with all openings on intersecting center lines.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All standard weight fittings have plain faces. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	9	6 $\frac{1}{2}$	\$29.50	\$31.00
5	10	7 $\frac{1}{2}$	31.50	33.00
6	11	8	36.00	38.00
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	44.75	47.00
8	13 $\frac{1}{2}$	9	52.50	55.00
10	16	11	84.00	88.00
12	19	12	110.50	115.00
14	21	14	144.50	150.00
16	23 $\frac{1}{2}$	15	167.50	175.00

Larger sizes made to order. Prices upon application.

Elbows not listed above will be made to order at a special price.



## Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure

## Straight Double Branch Elbows



No. 507

All standard weight fittings have plain faces. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	9	6 $\frac{1}{2}$	\$28.50	\$30.00
5	10	7 $\frac{1}{2}$	36.00	37.50
6	11	8	38.00	40.00
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	42.75	45.00
8	13 $\frac{1}{2}$	9	47.50	50.00
10	16	11	66.00	70.00
12	19	12	90.50	95.00
14	21	14	119.50	125.00
16	23 $\frac{1}{2}$	15	142.50	150.00

Larger sizes made to order. Prices upon application.

## Reducing Double Branch Elbows

Reducing on the Branches Same Size



No. 508

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Double branch elbows, whether straight or reducing, carry same dimensions center to face and face to face as regular straight size elbows and tees.

Prices given for reducing elbows are for fittings reducing on the branches same size. If fittings are wanted with two branches of two different sizes, or reducing on the inlet, they will be furnished on special order at a special price.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All standard weight fittings have plain faces. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	9	6 $\frac{1}{2}$	\$31.50	\$33.00
5	10	7 $\frac{1}{2}$	39.50	41.00
6	11	8	42.00	44.00
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	47.75	50.00
8	13 $\frac{1}{2}$	9	52.50	55.00
10	16	11	73.50	77.50
12	19	12	100.50	105.00
14	21	14	132.50	138.00
16	23 $\frac{1}{2}$	15	157.50	165.00

Larger sizes made to order. Prices upon application.

## Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure

## Tees



No. 509, Straight



No. 510, Reducing

All reducing tees, 16 inches and smaller, take the same center to face dimensions as straight size tees of larger port. All tees reducing on the run only take the same dimensions center to face as the largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on the size of outlet.

Bullheads, or tees having outlet larger than the run, will be the same length center to face of all openings as a tee with all openings of the size of the outlet.

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

## Straight Tees

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 $\frac{1}{4}$	4 $\frac{5}{8}$	3 $\frac{3}{4}$	\$4.35	\$5.25
1 $\frac{1}{2}$	5	4	4.35	5.25
2	6	4 $\frac{1}{2}$	4.35	5.25
2 $\frac{1}{2}$	7	5	4.55	5.45
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	5.00	6.10
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	5.85	7.10
4	9	6 $\frac{1}{2}$	6.50	8.00
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	8.00	9.50
5	10	7 $\frac{1}{2}$	9.10	10.60
6	11	8	11.00	12.95
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	15.25	17.50
8	13 $\frac{1}{2}$	9	17.40	19.80
9	15	10	24.65	28.00
10	16	11	27.50	31.50
12	19	12	40.50	45.00
14	21	14	60.00	65.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	68.00	74.75
16	23 $\frac{1}{2}$	15	79.00	86.50
18	25	16 $\frac{1}{2}$	103.00	112.00
20	27 $\frac{1}{2}$	18	130.00	140.00
22	29 $\frac{1}{2}$	20	164.00	177.00
24	32	22	203.00	218.00

## Reducing Tees

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 $\frac{1}{2}$	5	4	\$5.00	\$5.90
2	6	4 $\frac{1}{2}$	5.00	5.90
2 $\frac{1}{2}$	7	5	5.25	6.15
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	5.75	6.85
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	6.75	8.00
4	9	6 $\frac{1}{2}$	7.50	9.00
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	9.25	10.75
5	10	7 $\frac{1}{2}$	10.50	12.00
6	11	8	12.65	14.60
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	17.50	19.75
8	13 $\frac{1}{2}$	9	20.00	22.40
9	15	10	28.50	31.85
10	16	11	31.50	35.50
12	19	12	46.50	51.00
14	21	14	69.00	74.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	78.00	84.75
16	23 $\frac{1}{2}$	15	91.00	98.50
18	25	16 $\frac{1}{2}$	118.00	127.00
20	27 $\frac{1}{2}$	18	150.00	160.00
22	29 $\frac{1}{2}$	20	189.00	202.00
24	32	22	233.00	248.00

Larger sizes made to order. Prices upon application.



## Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

Straight Single Sweep  
Tees

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.



No. 511

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6	4 $\frac{1}{2}$	\$5.00	\$5.90
2 $\frac{1}{2}$	7	5	5.25	6.15
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	5.75	6.85
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	6.75	8.00
4	9	6 $\frac{1}{2}$	7.50	9.00
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	9.25	10.75
5	10	7 $\frac{1}{2}$	10.50	12.00
6	11	8	12.65	14.60
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	17.50	19.75
8	13 $\frac{1}{2}$	9	20.00	22.40
9	15	10	28.50	31.85
10	16	11	31.50	35.50
12	19	12	46.50	51.00
14	21	14	69.00	74.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	78.00	84.75
16	23 $\frac{1}{2}$	15	91.00	98.50
18	25	16 $\frac{1}{2}$	118.00	127.00
20	27 $\frac{1}{2}$	18	150.00	160.00
22	29 $\frac{1}{2}$	20	189.00	202.00
24	32	22	233.00	248.00

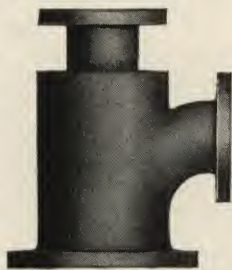
Larger sizes made to order. Prices upon application.

## Reducing Single Sweep Tees

## Reducing in Run or Branch

All reducing tees, 16 inches and smaller, take same center to face dimensions as straight size tees of largest port. All tees reducing on run only take same dimensions center to face as largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on size of reduced outlet.

Reducing single sweep tees made to order only. Single sweep tees with side openings larger than run, not made.



No. 512

All standard weight fittings have plain faces.

Bolt holes are drilled  $\frac{1}{8}$  inch larger in diameter than diameters of bolts.

Sizes of all fittings scheduled indicate the inside diameters of ports. Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2 $\frac{1}{2}$	7	5	\$6.00	\$6.90
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	6.60	7.70
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	7.75	9.00
4	9	6 $\frac{1}{2}$	8.65	10.15
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	10.60	12.10
5	10	7 $\frac{1}{2}$	12.00	13.50
6	11	8	14.50	16.45
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	20.00	22.25
8	13 $\frac{1}{2}$	9	23.00	25.40
9	15	10	32.75	36.10
10	16	11	36.00	40.00
12	19	12	53.50	58.00
14	21	14	79.00	84.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	90.00	96.75
16	23 $\frac{1}{2}$	15	105.00	112.50
18	25	16 $\frac{1}{2}$	135.00	144.00
20	27 $\frac{1}{2}$	18	173.00	183.00
22	29 $\frac{1}{2}$	20	217.00	230.00
24	32	22	268.00	283.00

Larger sizes made to order. Prices upon application.

## Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure

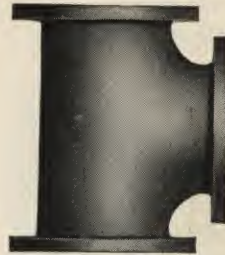
Straight Double Sweep  
Tees

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only unless otherwise ordered.



No. 513

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 $\frac{1}{4}$	4 $\frac{5}{8}$	3 $\frac{3}{4}$	\$5.00	\$5.90
1 $\frac{1}{2}$	5	4	5.00	5.90
2	6	4 $\frac{1}{2}$	5.00	5.90
2 $\frac{1}{2}$	7	5	5.25	6.15
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	5.75	6.85
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	6.75	8.00
4	9	6 $\frac{1}{2}$	7.50	9.00
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	9.25	10.75
5	10	7 $\frac{1}{2}$	10.50	12.00
6	11	8	12.65	14.60
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	17.50	19.75
8	13 $\frac{1}{2}$	9	20.00	22.40
9	15	10	28.50	31.85
10	16	11	31.50	35.50
12	19	12	46.50	51.00
14	21	14	69.00	74.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	78.00	84.75
16	23 $\frac{1}{2}$	15	91.00	98.50
18	25	16 $\frac{1}{2}$	118.00	127.00
20	27 $\frac{1}{2}$	18	150.00	160.00
22	29 $\frac{1}{2}$	20	189.00	202.00
24	32	22	233.00	248.00

Larger sizes made to order. Prices upon application.

## Reducing Double Sweep Tees

## Reducing in Branch Only

All reducing tees 16 inches and smaller reducing on outlet, take same center to face dimensions as straight size tees of largest port.

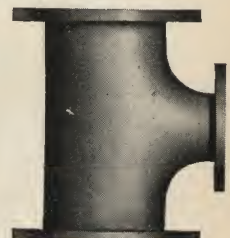
Tees, size 18 inches and larger reducing on outlet, are made in two lengths, depending on size of outlet.

Double sweep tees not made reducing on run.

All standard weight fittings have plain faces.

Bolt holes are drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate the inside diameter of ports.

Furnished faced only, unless otherwise ordered.



No. 514

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6	4 $\frac{1}{2}$	\$5.75	\$6.65
2 $\frac{1}{2}$	7	5	6.00	6.90
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	6.60	7.70
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	7.75	9.00
4	9	6 $\frac{1}{2}$	8.65	10.15
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	10.60	12.10
5	10	7 $\frac{1}{2}$	12.00	13.50
6	11	8	14.50	16.45
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	20.00	22.25
8	13 $\frac{1}{2}$	9	23.00	25.40
9	15	10	32.75	36.10
10	16	11	36.00	40.00
12	19	12	53.50	58.00
14	21	14	79.00	84.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	90.00	96.75
16	23 $\frac{1}{2}$	15	105.00	112.50
18	25	16 $\frac{1}{2}$	135.00	144.00
20	27 $\frac{1}{2}$	18	173.00	183.00
22	29 $\frac{1}{2}$	20	217.00	230.00
24	32	22	268.00	283.00

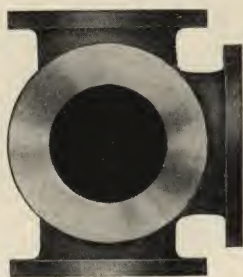
Larger sizes made to order. Prices upon application.



## Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure

## Straight Side Outlet or Four Way Tees



No. 515

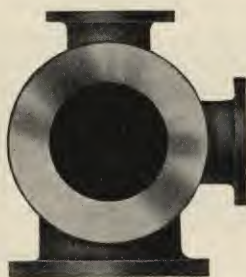
All standard weight fittings have plain faces. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts. Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	9	6 $\frac{1}{2}$	\$31.00	\$33.00
5	10	7 $\frac{1}{2}$	35.00	37.00
6	11	8	42.25	45.00
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	49.50	52.50
8	13 $\frac{1}{2}$	9	56.75	60.00
10	16	11	84.50	90.00
12	19	12	114.00	120.00
14	21	14	142.50	150.00
16	23 $\frac{1}{2}$	15	170.00	180.00

Larger sizes made to order. Prices upon application.

## Reducing Side Outlet or Four Way Tees



No. 516

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Fittings reducing on the run only, the long body pattern will always be used.

Size outlet tees, whether straight or reducing, carry same dimensions center to face and face to face as regular tees having same reductions.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All standard weight fittings have plain faces. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

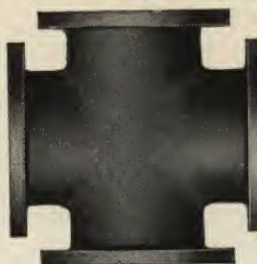
Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	9	6 $\frac{1}{2}$	\$34.00	\$36.00
5	10	7 $\frac{1}{2}$	39.00	41.00
6	11	8	47.25	50.00
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	55.00	58.00
8	13 $\frac{1}{2}$	9	62.75	66.00
10	16	11	94.50	100.00
12	19	12	126.00	132.00
14	21	14	157.00	165.00
16	23 $\frac{1}{2}$	15	190.00	200.00

Larger sizes made to order. Prices upon application.

## Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure

## Straight Crosses



No. 517

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 $\frac{1}{4}$	4 $\frac{5}{8}$	3 $\frac{3}{4}$	\$6.75	\$7.95
1 $\frac{1}{2}$	5	4	6.75	7.95
2	6	4 $\frac{1}{2}$	6.75	7.95
2 $\frac{1}{2}$	7	5	6.95	8.15
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	7.65	9.05
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	9.00	10.70
4	9	6 $\frac{1}{2}$	10.00	12.00
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	12.00	14.00
5	10	7 $\frac{1}{2}$	13.75	15.75
6	11	8	16.75	19.25
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	23.00	26.00
8	13 $\frac{1}{2}$	9	26.50	29.75
9	15	10	37.50	42.00
10	16	11	42.00	47.50
12	19	12	61.50	67.50
14	21	14	91.00	98.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	103.00	112.00
16	23 $\frac{1}{2}$	15	120.00	130.00
18	25	16 $\frac{1}{2}$	157.00	169.00
20	27 $\frac{1}{2}$	18	198.00	212.00
22	29 $\frac{1}{2}$	20	248.00	266.00
24	32	22	310.00	330.00

Larger sizes made to order. Prices upon application.

## Reducing Crosses

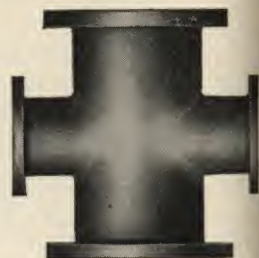
All reducing crosses, 16 inches and smaller, take same center to face dimensions as straight size crosses of largest port. All crosses reducing on run only take same dimensions center to face, as largest straight size. Sizes 18 inches and larger, reducing on the outlet, are made in two lengths depending on size of outlet.

All standard weight fittings have plain faces. Bolt holes are drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6	4 $\frac{1}{2}$	\$7.75	\$8.95
2 $\frac{1}{2}$	7	5	8.00	9.20
3	7 $\frac{1}{2}$	5 $\frac{1}{2}$	8.75	10.15
3 $\frac{1}{2}$	8 $\frac{1}{2}$	6	10.35	12.05
4	9	6 $\frac{1}{2}$	11.50	13.50
4 $\frac{1}{2}$	9 $\frac{1}{4}$	7	13.75	15.75
5	10	7 $\frac{1}{2}$	15.75	17.75
6	11	8	19.25	21.75
7	12 $\frac{1}{2}$	8 $\frac{1}{2}$	26.50	29.50
8	13 $\frac{1}{2}$	9	30.50	33.75
9	15	10	43.00	47.50
10	16	11	48.00	53.50
12	19	12	71.00	77.00
14	21	14	105.00	112.50
15	22 $\frac{1}{4}$	14 $\frac{1}{2}$	118.00	127.00
16	23 $\frac{1}{2}$	15	138.00	148.00
18	25	16 $\frac{1}{2}$	180.00	192.00
20	27 $\frac{1}{2}$	18	228.00	242.00
22	29 $\frac{1}{2}$	20	285.00	303.00
24	32	22	355.00	375.00

Larger sizes made to order. Prices upon application.



No. 518



## Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

## Straight Y Branches or Laterals



No. 519

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$ -inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

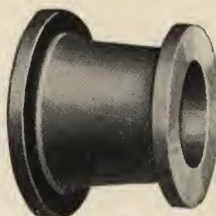
Size Inches	Diameter Flanges Inches	Center to Face and Face to Face, Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6	Furnished on request.	\$6.75	\$7.95
2½	7		6.95	8.15
3	7½		7.65	9.05
3½	8½		9.00	10.70
4	9		10.00	12.00
4½	9¼		12.00	14.00
5	10		13.75	15.75
6	11		16.75	19.25
7	12½		23.00	26.00
8	13½		26.50	29.75
9	15		37.50	42.00
10	16		42.00	47.50
12	19		61.50	67.50
14	21		91.00	98.50
15	22¼		103.00	112.00
16	23½		120.00	130.00
18	25		157.00	169.00
20	27½		198.00	212.00
22	29½		248.00	266.00
24	32		310.00	330.00

Larger sizes made to order. Prices upon application.

## Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

## Standard Taper Reducers



No. 521

All standard weight fittings have plain faces.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger in diameter than bolt diameter.

Sizes of all fittings scheduled indicate inside diameter of ports. The face to face dimensions standard or eccentric will be the same.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Face to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
3 x 2	7½ x 6	6	\$6.90	\$7.60
3½ x 2½	8½ x 7	6½	8.10	8.95
4 x 2	9 x 6	7	9.00	10.00
4 x 2½	9 x 7	7	9.00	10.00
4 x 3	9 x 7½	7	9.00	10.00
5 x 2	10 x 6	8	12.50	13.50
5 x 2½	10 x 7	8	12.50	13.50
5 x 3	10 x 7½	8	12.50	13.50
5 x 4	10 x 9	8	12.50	13.50
6 x 3	11 x 7½	9	15.25	16.55
6 x 3½	11 x 8½	9	15.25	16.55
6 x 4	11 x 9	9	15.25	16.55
6 x 5	11 x 10	9	15.25	16.55
7 x 3	12½ x 7½	10	21.00	22.50
7 x 4	12½ x 9	10	21.00	22.50
7 x 5	12½ x 10	10	21.00	22.50
7 x 6	12½ x 11	10	21.00	22.50
8 x 3	13½ x 7½	11	24.00	25.60
8 x 4	13½ x 9	11	24.00	25.60
8 x 5	13½ x 10	11	24.00	25.60
8 x 6	13½ x 11	11	24.00	25.60
10 x 4	16 x 9	12	38.00	40.70
10 x 4	16 x 10	12	38.00	40.70
10 x 6	16 x 11	12	38.00	40.70
10 x 8	16 x 13½	12	38.00	40.70
12 x 5	19 x 10	14	56.00	59.00
12 x 6	19 x 11	14	56.00	59.00
12 x 8	19 x 13½	14	56.00	59.00
12 x 10	19 x 16	14	56.00	59.00
14 x 6	21 x 11	16	70.00	73.75
14 x 8	21 x 13½	16	70.00	73.75
14 x 10	21 x 16	16	70.00	73.75
14 x 12	21 x 19	16	70.00	73.75
15 x 8	22¼ x 13½	17	80.00	84.50
15 x 10	22¼ x 16	17	80.00	84.50
15 x 12	22¼ x 19	17	80.00	84.50
15 x 14	22¼ x 21	17	80.00	84.50
16 x 8	23½ x 13½	18	90.00	95.00
16 x 10	23½ x 16	18	90.00	95.00
16 x 12	23½ x 19	18	90.00	95.00
16 x 14	23½ x 21	18	90.00	95.00
18 x 10	25 x 16	19	105.00	111.00
18 x 12	25 x 19	19	105.00	111.00
18 x 14	25 x 21	19	105.00	111.00
18 x 16	25 x 23½	19	105.00	111.00
20 x 12	27½ x 19	20	120.00	127.00
20 x 14	27½ x 21	20	120.00	127.00
20 x 16	27½ x 23½	20	120.00	127.00
20 x 18	27½ x 25	20	120.00	127.00
22 x 14	29½ x 21	22	150.00	159.00
22 x 16	29½ x 23½	22	150.00	159.00
22 x 18	29½ x 25	22	150.00	159.00
22 x 20	29½ x 27½	22	150.00	159.00
24 x 16	32 x 23½	24	190.00	200.00
24 x 18	32 x 25	24	190.00	200.00
24 x 20	32 x 27½	24	190.00	200.00
24 x 22	32 x 29½	24	190.00	200.00

Taper reducers of any other dimensions special on order.

## Eccentric Taper Reducers

Eccentric taper reducers furnished on special order.

Prices upon application.

## Reducing Y Branches or Laterals

## Reducing in Run or Branch

All Y Branches or laterals reducing on run only have same dimensions, face to face, as straight size laterals. All reducing Y branches or laterals, 16 inches and smaller, have same dimensions as same sizes in straight size fittings. Sizes 18 inches and up, reducing on branch, are made in long or short body pattern, depending on size of branch.

All standard weight fittings have plain faces. Bolt holes are drilled  $\frac{1}{8}$ -inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate inside diameter of ports.

Furnished faced only unless otherwise ordered.



No. 520

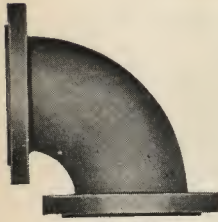
Size Inches	Diameter Flanges Inches	Center to Face and Face to Face, Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6	Furnished on request.	\$7.75	\$8.95
2½	7		8.00	9.20
3	7½		8.75	10.15
3½	8½		10.35	12.05
4	9		11.50	13.50
4½	9¼		13.75	15.75
5	10		15.75	17.75
6	11		19.25	21.75
7	12½		26.50	29.50
8	13½		30.50	33.75
9	15		43.00	47.50
10	16		48.00	53.50
12	19		71.00	77.00
14	21		105.00	112.00
15	22¼		118.00	127.00
16	23½		138.00	148.00
18	25		180.00	192.00
20	27½		228.00	242.00
22	29½		285.00	303.00
24	32		355.00	375.00

Larger sizes made to order. Prices upon application.



**Extra Heavy Cast Iron Flanged Fittings**

For 250 Pounds Steam Working Pressure

**90° Elbows****No. 531**

All extra heavy fittings have a raised surface for gaskets  $\frac{1}{16}$ -inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$ -inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 1/4	5 1/4	4 1/4	\$4.50	\$5.40
1 1/2	6 1/8	4 1/2	4.50	5.40
2	6 1/2	5	4.50	5.40
2 1/2	7 1/2	5 1/2	4.75	5.65
3	8 1/4	6	5.15	6.25
3 1/2	9	6 1/2	6.10	7.35
4	10	7	6.75	8.25
4 1/2	10 1/2	7 1/2	8.25	9.75
5	11	8	9.53	10.85
6	12 1/2	8 1/2	11.40	13.40
7	14	9	15.75	18.00
8	15	10	18.00	20.50
9	16 1/4	10 1/2	25.50	28.85
10	17 1/2	11 1/2	28.50	32.50
12	20 1/2	13	42.00	46.50
14	23	15	62.00	67.50
15	24 1/2	15 1/2	70.00	77.00
16	25 1/2	16 1/2	82.00	90.00
18	28	18	106.00	115.00
20	30 1/2	19 1/2	135.00	145.00
22	33	20 1/2	170.00	183.00
24	36	22 1/2	210.00	225.00

Larger sizes made to order. Prices upon application.

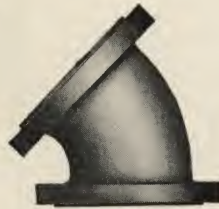
**45° Elbows**

All extra heavy fittings have a raised surface for gaskets  $\frac{1}{16}$ -inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$ -inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

**No. 532**

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 1/4	5 1/4	2 1/2	\$5.00	\$5.90
1 1/2	6 1/8	2 3/4	5.00	5.90
2	6 1/2	3	5.00	5.90
2 1/2	7 1/2	3 1/2	5.25	6.15
3	8 1/4	3 1/2	5.65	6.75
3 1/2	9	4	6.75	8.00
4	10	4 1/2	7.50	9.00
4 1/2	10 1/2	4 1/2	9.00	10.50
5	11	5	10.35	11.85
6	12 1/2	5 1/2	12.50	14.50
7	14	6	16.50	18.75
8	15	6	19.00	21.50
9	16 1/4	6 1/2	26.75	30.10
10	17 1/2	7	30.00	34.00
12	20 1/2	8	44.00	48.50
14	23	8 1/2	62.00	67.50
15	24 1/2	9	70.00	77.00
16	25 1/2	9 1/2	82.00	90.00
18	28	10	106.00	115.00
20	30 1/2	10 1/2	135.00	145.00
22	33	11	170.00	183.00
24	36	12	210.00	225.00

Larger sizes made to order. Prices upon application.

**Extra Heavy Cast Iron Flanged Fittings**

For 250 Pounds Steam Working Pressure

**Long Radius Elbows****No. 534**

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	Radius Inches	PRICE, EACH	
				Faced Only	Faced and Drilled
2	6 1/2	6 1/2	5 1/4	\$7.50	\$8.85
2 1/2	7 1/2	7	5 5/8	8.00	9.35
3	8 1/4	7 3/4	6 1/4	8.60	10.25
3 1/2	9	8 1/2	6 7/8	10.25	12.15
4	10	9	7 3/8	11.25	13.50
4 1/2	10 1/2	9 1/2	7 3/4	13.75	16.00
5	11	10 1/4	8 1/2	15.50	17.75
6	12 1/2	11 1/2	9 5/8	19.00	22.00
7	14	12 3/4	10 7/8	26.50	29.85
8	15	14	12	30.00	33.75
9	16 1/4	15 1/4	13	42.50	47.50
10	17 1/2	16 1/2	14 1/8	47.75	53.75
12	20 1/2	19	16 1/2	70.00	76.75
14	23	21 1/2	18 3/8	103.50	111.75
15	24 1/2	22 3/4	20	117.00	127.00
16	25 1/2	24	21 1/4	137.00	149.00
18	28	26 1/2	23 5/8	177.00	191.00
20	30 1/2	29	26	225.00	240.00
22	33	31 1/2	28 3/8	285.00	305.00
24	36	34	30 3/4	350.00	373.00

Larger sizes made to order. Elbows of different dimensions from above furnished on order at special prices.

**Round and Square Base Elbows**

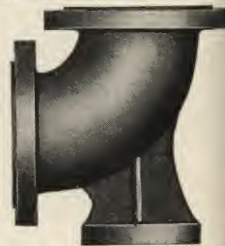
The measurement across the flat edges of square base flange is the same as the diameter of the round base flange.

All extra fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, except base, as quoted unless otherwise ordered.

**No. 535**

Size Inches	Diameter Flanges Inches	Center to Face Inches	Diameter Base Flange Inches	PRICE, EACH		
				Faced Only	Faced and Drilled	For Facing and Drilling Base Flange
4	10	7	6 1/2	\$13.50	\$15.00	\$4.50
4 1/2	10 1/2	7 1/4	6 1/2	16.50	18.00	4.50
5	11	8	7 1/2	18.75	20.25	5.25
6	12 1/2	8 1/2	7 1/2	22.75	24.75	5.25
7	14	9	7 1/2	31.50	33.75	5.25
8	15	10	10	36.00	38.50	7.50
9	16 1/4	10 1/2	10	51.00	54.35	7.50
10	17 1/2	11 1/2	10	57.00	61.00	7.50
12	20 1/2	13	12 1/2	84.00	88.50	11.00
14	23	15	12 1/2	105.00	110.50	11.00
15	24 1/2	15 1/2	12 1/2	120.00	127.00	11.00
16	25 1/2	16 1/2	12 1/2	135.00	143.00	11.00
18	28	18	15	157.00	166.00	18.00
20	30 1/2	19 1/2	15	180.00	190.00	18.00
22	33	20 1/2	17 1/2	225.00	238.00	18.00
24	36	22 1/2	17 1/2	285.00	300.00	18.00

\*Port openings only, not base flange.

**Base Tees**

Base tees made on special order. Prices on application.



## Extra Heavy Cast Iron Flanged Fittings

For 250 Pounds Steam Working Pressure

## Reducing Taper Elbows



No. 533

Reducing elbows carry same dimensions center to face as regular elbows of largest straight size.

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise specified.

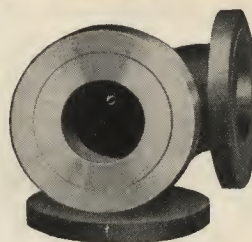
Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2 x $1\frac{1}{4}$	$6\frac{1}{2}$ x $5\frac{1}{4}$	5	\$9.00	\$9.90
2 x $1\frac{1}{2}$	$6\frac{1}{2}$ x $6\frac{1}{8}$	5	9.00	9.90
$2\frac{1}{2}$ x $1\frac{1}{2}$	$7\frac{1}{2}$ x $6\frac{1}{8}$	$5\frac{1}{2}$	9.50	10.40
$2\frac{1}{2}$ x 2	$7\frac{1}{2}$ x $6\frac{1}{2}$	$5\frac{1}{2}$	9.50	10.40
3 x $1\frac{1}{2}$	$8\frac{1}{4}$ x $6\frac{1}{8}$	6	10.25	11.35
3 x 2	$8\frac{1}{4}$ x $6\frac{1}{2}$	6	10.25	11.35
3 x $2\frac{1}{2}$	$8\frac{1}{4}$ x $7\frac{1}{2}$	6	10.25	11.35
$3\frac{1}{2}$ x 2	9 x $6\frac{1}{2}$	$6\frac{1}{2}$	12.25	13.50
$3\frac{1}{2}$ x $2\frac{1}{2}$	9 x $7\frac{1}{2}$	$6\frac{1}{2}$	12.25	13.50
$3\frac{1}{2}$ x 3	9 x $8\frac{1}{4}$	$6\frac{1}{2}$	12.25	13.50
4 x 2	10 x $6\frac{1}{2}$	7	13.50	15.00
4 x $2\frac{1}{2}$	10 x $7\frac{1}{2}$	7	13.50	15.00
4 x 3	10 x $8\frac{1}{4}$	7	13.50	15.00
4 x $3\frac{1}{2}$	10 x 9	7	13.50	15.00
5 x $2\frac{1}{2}$	11 x $7\frac{1}{2}$	8	18.75	20.25
5 x 3	11 x $8\frac{1}{4}$	8	18.75	20.25
5 x 4	11 x 10	8	18.75	20.25
6 x 3	$12\frac{1}{2}$ x $8\frac{1}{4}$	$8\frac{1}{2}$	22.75	24.75
6 x $3\frac{1}{2}$	$12\frac{1}{2}$ x 9	$8\frac{1}{2}$	22.75	24.75
6 x 4	$12\frac{1}{2}$ x 10	$8\frac{1}{2}$	22.75	24.75
6 x $4\frac{1}{2}$	$12\frac{1}{2}$ x $10\frac{1}{2}$	$8\frac{1}{2}$	22.75	24.75
6 x 5	$12\frac{1}{2}$ x 11	$8\frac{1}{2}$	22.75	24.75
7 x 4	14 x 10	9	31.50	33.75
7 x 5	14 x 11	9	31.50	33.75
7 x 6	14 x $12\frac{1}{2}$	9	31.50	33.75
8 x 4	15 x 10	10	36.00	38.50
8 x 5	15 x 11	10	36.00	38.50
8 x 6	15 x $12\frac{1}{2}$	10	36.00	38.50
8 x 7	15 x 14	10	36.00	38.50
10 x 5	$17\frac{1}{2}$ x 11	$11\frac{1}{2}$	57.00	61.00
10 x 6	$17\frac{1}{2}$ x $12\frac{1}{2}$	$11\frac{1}{2}$	57.00	61.00
10 x 7	$17\frac{1}{2}$ x 14	$11\frac{1}{2}$	57.00	61.00
10 x 8	$17\frac{1}{2}$ x 15	$11\frac{1}{2}$	57.00	61.00
12 x 7	$20\frac{1}{2}$ x 14	13	84.00	88.50
12 x 8	$20\frac{1}{2}$ x 15	13	84.00	88.50
12 x 9	$20\frac{1}{2}$ x $16\frac{1}{4}$	13	84.00	88.50
12 x 10	$20\frac{1}{2}$ x $17\frac{1}{2}$	13	84.00	88.50
14 x 16	23 x $12\frac{1}{2}$	15	105.00	110.50
14 x 10	23 x $17\frac{1}{2}$	15	105.00	110.50
14 x 12	23 x $20\frac{1}{2}$	15	105.00	110.50
15 x 6	$24\frac{1}{2}$ x $12\frac{1}{2}$	$15\frac{1}{2}$	120.00	127.00
15 x 10	$24\frac{1}{2}$ x $17\frac{1}{2}$	$15\frac{1}{2}$	120.00	127.00
15 x 12	$24\frac{1}{2}$ x $20\frac{1}{2}$	$15\frac{1}{2}$	120.00	127.00
16 x 8	$25\frac{1}{2}$ x 15	$16\frac{1}{2}$	135.00	143.00
16 x 10	$25\frac{1}{2}$ x $17\frac{1}{2}$	$16\frac{1}{2}$	135.00	143.00
16 x 12	$25\frac{1}{2}$ x $20\frac{1}{2}$	$16\frac{1}{2}$	135.00	143.00
16 x 14	$25\frac{1}{2}$ x 23	$16\frac{1}{2}$	135.00	143.00

Elbows not listed above will be made to order at a special price.

## Extra Heavy Cast Iron Flanged Fittings

For 250 Pounds Steam Working Pressure

## Straight Side Outlet Elbows



No. 536

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch thick inside of bolt holes. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

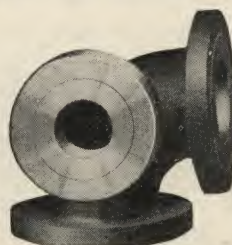
Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	10	7	\$35.75	\$38.00
5	11	8	37.75	40.00
6	$12\frac{1}{2}$	$8\frac{1}{2}$	42.00	45.00
7	14	9	51.75	55.00
8	15	10	61.25	65.00
10	$17\frac{1}{2}$	$11\frac{1}{2}$	89.00	95.00
12	$20\frac{1}{2}$	13	113.25	120.00
14	23	15	146.75	155.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	168.00	180.00

Larger sizes made to order. Prices upon application.

## Reducing Side Outlet Elbows

Reducing on the Branches Same Size



No. 537

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Side outlet elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular tees having same reductions.

Side outlet elbows, whether straight or reducing, are furnished with all openings on intersecting center lines.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch thick inside of bolt holes. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	10	7	\$39.75	\$42.00
5	11	8	41.75	44.00
6	$12\frac{1}{2}$	$8\frac{1}{2}$	47.00	50.00
7	14	9	56.75	60.00
8	16	10	67.25	71.00
10	$17\frac{1}{2}$	$11\frac{1}{2}$	99.00	105.00
12	$20\frac{1}{2}$	13	123.25	130.00
14	23	15	161.75	170.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	183.00	195.00

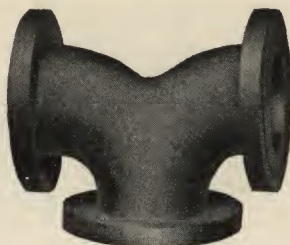
Larger sizes made to order. Prices upon application.



## Extra Heavy Cast Iron Flanged Fittings

For 250 Pounds Steam Working Pressure

## Straight Double Branch Elbows



No. 538

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch thick inside of bolt holes. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	10	7	\$35.75	\$38.00
5	11	8	42.75	45.00
6	12½	8½	49.50	52.50
7	14	9	56.50	60.00
8	15	10	66.25	70.00
10	17½	11½	84.00	90.00
12	20½	13	108.25	115.00
14	23	15	141.75	150.00
16	25½	16½	168.00	180.00

Larger sizes made to order. Prices upon application.

## Reducing Double Branch Elbows

Reducing on the Branches Same Size



No. 539

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Double branch elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular straight size elbows and tees.

Prices given for reducing elbows are for fittings reducing on the branches same size. If fittings are wanted with two branches of two different sizes, or reducing on the inlet, they will be furnished on special order at a special price.

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch thick inside of bolt holes. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Sizes of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

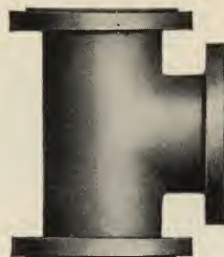
Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	10	7	\$39.75	\$42.00
5	11	8	47.75	50.00
6	12½	8½	54.50	57.50
7	14	9	62.50	66.00
8	15	10	73.75	77.50
10	17½	11½	94.00	100.00
12	20½	13	118.25	125.00
14	23	15	156.75	165.00
16	25½	16½	188.00	200.00

Larger sizes made to order. Prices upon application.

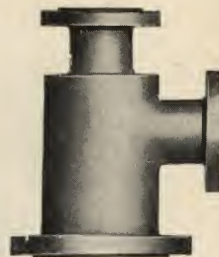
## Extra Heavy Cast Iron Flanged Fittings

For 250 Pounds Steam Working Pressure

## Tees



No. 540, Straight



No. 541, Reducing

All reducing tees, 16 inches and smaller take the same center to face dimensions as straight size tees of largest port. All tees reducing on the run only take the same dimensions center to face as the largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on the size of outlet.

Bullheads, or tees having outlet larger than the run, will be the same length center to face of all openings as a tee with all openings of the size of the outlet.

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

## Straight Tees

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1¼	5¼	4¼	\$6.50	\$7.85
1½	6¼	4½	6.50	7.85
2	6½	5	6.50	7.85
2½	7½	5½	6.90	8.25
3	8¼	6	7.50	9.15
3½	9	6½	8.90	10.80
4	10	7	9.75	12.00
4½	10½	7½	12.00	14.25
5	11	8	13.50	15.75
6	12½	8½	16.50	19.50
7	14	9	23.00	26.35
8	15	10	26.00	29.75
9	16¼	10½	37.00	42.00
10	17½	11½	41.50	47.50
12	20½	13	61.00	67.75
14	23	15	90.00	98.25
15	24½	15½	102.00	112.00
16	25½	16½	119.00	131.00
18	28	18	154.00	168.00
20	30½	19½	195.00	210.00
22	33	20½	247.00	267.00
24	36	22½	305.00	328.00

## Reducing Tees

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1½	6¼	4½	\$7.50	\$8.85
2	6½	5	7.50	8.85
2½	7½	5½	8.00	9.35
3	8¼	6	8.60	10.25
3½	9	6½	10.25	12.15
4	10	7	11.25	13.50
4½	10½	7½	13.75	16.00
5	11	8	15.50	17.75
6	12½	8½	19.00	22.00
7	14	9	26.50	29.85
8	15	10	30.00	33.75
9	16¼	10½	42.50	47.50
10	17½	11½	47.75	53.75
12	20½	13	70.00	76.75
14	23	15	103.50	111.75
15	24½	15½	117.00	127.00
16	25½	16½	137.00	149.00
18	28	18	177.00	191.00
20	30½	19½	225.00	240.00
22	33	20½	285.00	305.00
24	36	22½	350.00	373.00

Larger sizes made to order. Prices upon application.



### Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure

#### Straight Single Sweep Tees



No. 542

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts.

Size of all fittings scheduled indicate inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6 $\frac{1}{2}$	5	\$7.50	\$8.85
2 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	8.00	9.35
3	8 $\frac{1}{4}$	6	8.60	10.25
3 $\frac{1}{2}$	9	6 $\frac{1}{2}$	10.25	12.15
4	10	7	11.25	13.50
4 $\frac{1}{2}$	10 $\frac{1}{2}$	7 $\frac{1}{2}$	13.75	16.00
5	11	8	15.50	17.75
6	12 $\frac{1}{2}$	8 $\frac{1}{2}$	19.00	22.00
7	14	9	26.50	29.85
8	15	10	30.00	33.75
9	16 $\frac{1}{4}$	10 $\frac{1}{2}$	42.50	47.50
10	17 $\frac{1}{2}$	11 $\frac{1}{2}$	47.75	53.75
12	20 $\frac{1}{2}$	13	70.00	76.75
14	23	15	103.50	111.75
15	24 $\frac{1}{2}$	15 $\frac{1}{2}$	117.00	127.00
16	25 $\frac{1}{2}$	16 $\frac{1}{2}$	137.00	149.00
18	28	18	177.00	191.00
20	30 $\frac{1}{2}$	19 $\frac{1}{2}$	225.00	240.00
22	33	20 $\frac{1}{2}$	285.00	305.00
24	36	22 $\frac{1}{2}$	350.00	373.00

Larger sizes made to order. Prices upon application.

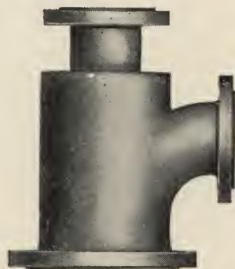
#### Reducing Single Sweep Tees Reducing in Run or Branch

All reducing tees, 16 inches and smaller, take same center to face dimensions as straight size tees of largest port. All tees reducing on run only take same dimensions center to face as largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on size of reduced outlet. Reducing single sweep tees made to order only. Single sweep tees with side openings larger than run, not made.

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports. Furnished faced only, unless otherwise ordered.



No. 543

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	\$9.15	\$10.50
3	8 $\frac{1}{4}$	6	9.90	11.55
3 $\frac{1}{2}$	9	6 $\frac{1}{2}$	11.75	13.65
4	10	7	13.00	15.25
4 $\frac{1}{2}$	10 $\frac{1}{2}$	7 $\frac{1}{2}$	15.75	18.00
5	11	8	17.85	20.10
6	12 $\frac{1}{2}$	8 $\frac{1}{2}$	22.00	25.00
7	14	9	30.50	33.85
8	15	10	34.50	38.25
9	16 $\frac{1}{4}$	10 $\frac{1}{2}$	49.00	54.00
10	17 $\frac{1}{2}$	11 $\frac{1}{2}$	55.00	61.00
12	20 $\frac{1}{2}$	13	80.00	86.75
14	23	15	119.00	127.25
15	24 $\frac{1}{2}$	15 $\frac{1}{2}$	135.00	145.00
16	25 $\frac{1}{2}$	16 $\frac{1}{2}$	158.00	170.00
18	28	18	204.00	218.00
20	30 $\frac{1}{2}$	19 $\frac{1}{2}$	260.00	275.00
22	33	20 $\frac{1}{2}$	327.00	347.00
24	36	22 $\frac{1}{2}$	402.00	425.00

Larger sizes made to order. Prices upon application.

### Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure

#### Straight Double Sweep Tees



No. 544

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size In.	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6 $\frac{1}{2}$	5	\$7.50	\$8.85
2 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	8.00	9.35
3	8 $\frac{1}{4}$	6	8.60	10.25
3 $\frac{1}{2}$	9	6 $\frac{1}{2}$	10.25	12.15
4	10	7	11.25	13.50
4 $\frac{1}{2}$	10 $\frac{1}{2}$	7 $\frac{1}{2}$	13.75	16.00
5	11	8	15.50	17.75
6	12 $\frac{1}{2}$	8 $\frac{1}{2}$	19.00	22.00
7	14	9	26.50	29.85
8	15	10	30.00	33.75
9	16 $\frac{1}{4}$	10 $\frac{1}{2}$	42.50	47.50
10	17 $\frac{1}{2}$	11 $\frac{1}{2}$	47.75	53.75
12	20 $\frac{1}{2}$	13	70.00	76.75
14	23	15	103.50	111.75
15	24 $\frac{1}{2}$	15 $\frac{1}{2}$	117.00	127.00
16	25 $\frac{1}{2}$	16 $\frac{1}{2}$	137.00	149.00
18	28	18	177.00	191.00
20	30 $\frac{1}{2}$	19 $\frac{1}{2}$	225.00	240.00
22	33	20 $\frac{1}{2}$	285.00	305.00
24	36	22 $\frac{1}{2}$	350.00	373.00

Larger sizes made to order. Prices upon application.

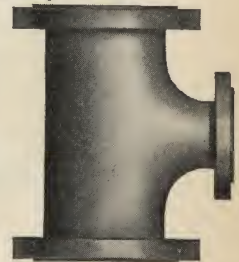
#### Reducing Double Sweep Tees Reducing in Branch Only

All reducing tees 16 inches and smaller reducing on outlet, take same center to face dimensions as straight size tees of largest port. Tees, sizes 18 inches and larger reducing on outlet, are made in two lengths, depending on size of outlet. Double sweep tees not made reducing on run.

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts. Sizes of all fittings scheduled indicate the inside diameter of ports.

Furnished faced only, unless otherwise ordered.



No. 545

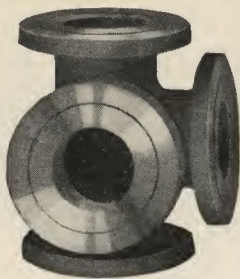
Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	\$9.15	\$10.50
3	8 $\frac{1}{4}$	6	9.90	11.55
3 $\frac{1}{2}$	9	6 $\frac{1}{2}$	11.75	13.65
4	10	7	13.00	15.25
4 $\frac{1}{2}$	10 $\frac{1}{2}$	7 $\frac{1}{2}$	15.75	18.00
5	11	8	17.85	20.10
6	12 $\frac{1}{2}$	8 $\frac{1}{2}$	22.00	25.00
7	14	9	30.50	33.85
8	15	10	34.50	38.25
9	16 $\frac{1}{4}$	10 $\frac{1}{2}$	49.00	54.00
10	17 $\frac{1}{2}$	11 $\frac{1}{2}$	55.00	61.00
12	20 $\frac{1}{2}$	13	80.00	86.75
14	23	15	119.00	127.25
15	24 $\frac{1}{2}$	15 $\frac{1}{2}$	135.00	145.00
16	25 $\frac{1}{2}$	16 $\frac{1}{2}$	158.00	170.00
18	28	18	204.00	218.00
20	30 $\frac{1}{2}$	19 $\frac{1}{2}$	260.00	275.00
22	33	20 $\frac{1}{2}$	327.00	347.00
24	36	22 $\frac{1}{2}$	402.00	425.00

Larger sizes made to order. Prices upon application.



**Extra Heavy Cast Iron Flanged Fittings**

For 250 Pounds Steam Working Pressure

**Straight Side Outlet or Four Way Tees**

No. 546

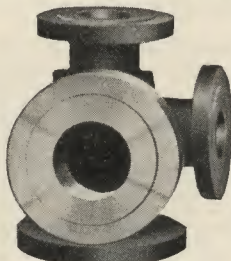
All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch thick inside of bolt holes. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	10	7	\$42.00	\$45.00
5	11	8	47.00	50.00
6	12 $\frac{1}{2}$	8 $\frac{1}{2}$	53.50	57.50
7	14	9	63.00	67.50
8	15	10	72.50	77.50
10	17 $\frac{1}{2}$	11 $\frac{1}{2}$	102.00	110.00
12	20 $\frac{1}{2}$	13	131.00	140.00
14	23	15	159.00	170.00
16	25 $\frac{1}{2}$	16 $\frac{1}{2}$	184.00	200.00

Larger sizes made to order. Prices upon application.

**Reducing Side Outlet or Four Way Tees**

No. 547

The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch. Fittings reducing on the run only, the long body pattern will always be used.

Side outlet tees, whether straight or reducing, carry same dimensions center to face and face to face as regular tees having same reductions.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch thick inside of bolt holes. Bolt holes drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

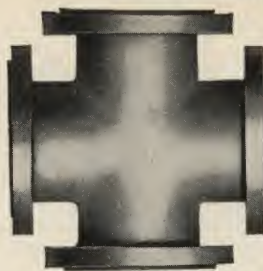
Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
4	10	7	\$47.00	\$50.00
5	11	8	52.00	55.00
6	12 $\frac{1}{2}$	8 $\frac{1}{2}$	59.00	63.00
7	14	9	70.50	75.00
8	15	10	80.00	85.00
10	17 $\frac{1}{2}$	11 $\frac{1}{2}$	112.00	120.00
12	20 $\frac{1}{2}$	13	146.00	155.00
14	23	15	174.00	185.00
16	25 $\frac{1}{2}$	16 $\frac{1}{2}$	204.00	220.00

Larger sizes made to order. Prices on application.

**Extra Heavy Cast Iron Flanged Fittings**

For 250 Pounds Steam Working Pressure

**Straight Crosses**

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	No. 548 Diameter Flanges, In.	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
1 $\frac{1}{4}$	5 $\frac{1}{4}$	4 $\frac{1}{4}$	\$10.00	\$11.80
1 $\frac{1}{2}$	6 $\frac{1}{8}$	4 $\frac{1}{2}$	10.00	11.80
2	6 $\frac{1}{2}$	5	10.00	11.80
2 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	10.50	12.30
3	8 $\frac{1}{4}$	6	11.50	13.75
3 $\frac{1}{2}$	9	6 $\frac{1}{2}$	13.50	16.00
4	10	7	15.00	18.00
4 $\frac{1}{2}$	10 $\frac{1}{2}$	7 $\frac{1}{2}$	18.00	21.00
5	11	8	20.50	23.50
6	12 $\frac{1}{2}$	8 $\frac{1}{2}$	25.00	29.00
7	14	9	35.00	39.50
8	15	10	40.00	45.00
9	16 $\frac{1}{4}$	10 $\frac{1}{2}$	56.00	62.75
10	17 $\frac{1}{2}$	11 $\frac{1}{2}$	63.00	71.00
12	20 $\frac{1}{2}$	13	92.00	101.00
14	23	15	136.00	147.00
15	24 $\frac{1}{2}$	15 $\frac{1}{2}$	155.00	169.00
16	25 $\frac{1}{2}$	16 $\frac{1}{2}$	180.00	196.00
18	28	18	235.00	253.00
20	30 $\frac{1}{2}$	19 $\frac{1}{2}$	300.00	320.00
22	33	20 $\frac{1}{2}$	375.00	401.00
24	36	22 $\frac{1}{2}$	465.00	495.00

Larger sizes made to order. Prices upon application.

**Reducing Crosses**

All reducing crosses, 16 inches and smaller, take same center to face dimensions as straight size crosses of largest port. All crosses reducing on run only take same dimensions, center to face, as largest straight size. Sizes 18 inches and larger, reducing on the outlet, are made in two lengths depending on size of outlet.

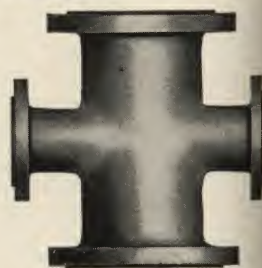
All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes.

Bolt holes are drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges, In.	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6 $\frac{1}{2}$	5	\$11.50	\$13.30
2 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	12.00	13.80
3	8 $\frac{1}{4}$	6	13.25	15.50
3 $\frac{1}{2}$	9	6 $\frac{1}{2}$	15.50	18.00
4	10	7	17.00	20.00
4 $\frac{1}{2}$	10 $\frac{1}{2}$	7 $\frac{1}{2}$	21.00	24.00
5	11	8	23.50	26.50
6	12 $\frac{1}{2}$	8 $\frac{1}{2}$	29.00	33.00
7	14	9	40.00	44.50
8	15	10	46.00	51.00
9	16 $\frac{1}{4}$	10 $\frac{1}{2}$	65.00	71.75
10	17 $\frac{1}{2}$	11 $\frac{1}{2}$	72.00	80.00
12	20 $\frac{1}{2}$	13	106.00	115.00
14	23	15	158.00	169.00
15	24 $\frac{1}{2}$	15 $\frac{1}{2}$	177.00	191.00
16	25 $\frac{1}{2}$	16 $\frac{1}{2}$	207.00	223.00
18	28	18	270.00	288.00
20	30 $\frac{1}{2}$	19 $\frac{1}{2}$	345.00	365.00
22	33	20 $\frac{1}{2}$	430.00	456.00
24	36	22 $\frac{1}{2}$	535.00	565.00

Larger sizes made to order. Prices upon application.



No. 549



**Extra Heavy Cast Iron Flanged Fittings**

For 250 Pounds Steam Working Pressure

**Straight Y Branches or Laterals**

No. 550

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$ -inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$  inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2	6 $\frac{1}{2}$	9	\$10.00	\$11.80
2 $\frac{1}{2}$	7 $\frac{1}{2}$	10 $\frac{1}{2}$	10.50	12.30
3	8 $\frac{1}{4}$	11	11.50	13.75
3 $\frac{1}{2}$	9	12 $\frac{1}{2}$	13.50	16.00
4	10	13 $\frac{1}{2}$	15.00	18.00
4 $\frac{1}{2}$	10 $\frac{1}{2}$	14 $\frac{1}{2}$	18.00	21.00
5	11	15	20.50	23.50
6	12 $\frac{1}{2}$	17 $\frac{1}{2}$	25.00	29.00
7	14	19	35.00	39.50
8	15	20 $\frac{1}{2}$	40.00	45.00
9	16 $\frac{1}{4}$	22 $\frac{1}{2}$	56.00	62.75
10	17 $\frac{1}{2}$	24	63.00	71.00
12	20 $\frac{1}{2}$	27 $\frac{1}{2}$	92.00	101.00
14	23	31	136.00	147.00
15	24 $\frac{1}{2}$	33	155.00	169.00
16	25 $\frac{1}{2}$	34 $\frac{1}{2}$	180.00	196.00
18	28	37 $\frac{1}{2}$	235.00	253.00
20	30 $\frac{1}{2}$	40 $\frac{1}{2}$	300.00	320.00
22	33	43 $\frac{1}{2}$	375.00	401.00
24	36	47 $\frac{1}{2}$	465.00	495.00

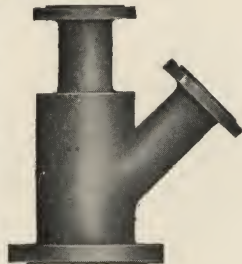
Larger sizes made to order. Prices upon application.

**Reducing Y Branches or Laterals****Reducing in Run or Branch**

All Y branches or laterals reducing or run only carry same dimensions, face to face, as straight size laterals. All reducing Y or laterals, 16 inches and smaller, take same center to face dimensions as same sizes in straight size fittings. Sizes 18 inches and up, reducing on branch, are made in 2 lengths, depending on size of branch.

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$  inch high, inside of bolt holes. Bolt holes are drilled  $\frac{1}{8}$  inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.



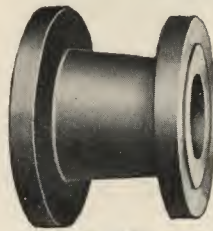
No. 551

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2 $\frac{1}{2}$	7 $\frac{1}{2}$	10 $\frac{1}{2}$	\$12.00	\$13.80
3	8 $\frac{1}{4}$	11	13.25	15.50
3 $\frac{1}{2}$	9	12 $\frac{1}{2}$	15.50	18.00
4	10	13 $\frac{1}{2}$	17.00	20.00
4 $\frac{1}{2}$	10 $\frac{1}{2}$	14 $\frac{1}{2}$	21.00	24.00
5	11	15	23.50	26.50
6	12 $\frac{1}{2}$	17 $\frac{1}{2}$	29.00	33.00
7	14	19	40.00	44.50
8	15	20 $\frac{1}{2}$	46.00	51.00
9	16 $\frac{1}{4}$	22 $\frac{1}{2}$	65.00	71.75
10	17 $\frac{1}{2}$	24	72.00	80.00
12	20 $\frac{1}{2}$	27 $\frac{1}{2}$	106.00	115.00
14	23	31	158.00	169.00
15	24 $\frac{1}{2}$	33	177.00	191.00
16	25 $\frac{1}{2}$	34 $\frac{1}{2}$	207.00	223.00
18	28	37 $\frac{1}{2}$	270.00	288.00
20	30 $\frac{1}{2}$	40 $\frac{1}{2}$	345.00	365.00
22	33	43 $\frac{1}{2}$	430.00	456.00
24	36	47 $\frac{1}{2}$	535.00	565.00

Larger sizes made to order. Prices upon application.

**Extra Heavy Cast Iron Flanged Fittings**

For 250 Pounds Steam Working Pressure

**Standard Taper Reducers**

No. 552

All extra heavy fittings have a raised surface, for gaskets  $\frac{1}{16}$ -inch high, inside of bolt holes.

Bolt holes will be drilled  $\frac{1}{8}$ -inch larger in diameter than diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports. The face to face dimensions standard or eccentric will be the same.

Furnished faced only unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	PRICE, EACH	
			Faced Only	Faced and Drilled
2 $\frac{1}{2}$ x 2	7 $\frac{1}{2}$ x 6 $\frac{1}{2}$	..	\$9.50	\$10.40
3 x 2	8 $\frac{1}{4}$ x 6 $\frac{1}{2}$	6	10.25	11.35
3 $\frac{1}{2}$ x 2 $\frac{1}{2}$	9 x 7 $\frac{1}{2}$	6 $\frac{1}{2}$	12.25	13.50
4 x 2	10 x 6 $\frac{1}{2}$	7	13.50	15.00
4 x 2 $\frac{1}{2}$	10 x 7 $\frac{1}{2}$	7	13.50	15.00
4 x 3	10 x 8 $\frac{1}{4}$	7	13.50	15.00
5 x 2	11 x 6 $\frac{1}{2}$	8	18.75	20.25
5 x 2 $\frac{1}{2}$	11 x 7 $\frac{1}{2}$	8	18.75	20.25
5 x 3	11 x 8 $\frac{1}{4}$	8	18.75	20.25
5 x 4	11 x 10	8	18.75	20.25
6 x 3	12 $\frac{1}{2}$ x 8 $\frac{1}{4}$	9	22.75	24.75
6 x 3 $\frac{1}{2}$	12 $\frac{1}{2}$ x 9	9	22.75	24.75
6 x 4	12 $\frac{1}{2}$ x 10	9	22.75	24.75
6 x 5	12 $\frac{1}{2}$ x 11	9	22.75	24.75
7 x 3	14 x 8 $\frac{1}{4}$	10	31.50	33.75
7 x 4	14 x 10	10	31.50	33.75
7 x 5	14 x 11	10	31.50	33.75
7 x 6	14 x 12 $\frac{1}{2}$	10	31.50	33.75
8 x 3	15 x 8 $\frac{1}{4}$	11	36.00	38.50
8 x 4	15 x 10	11	36.00	38.50
8 x 5	15 x 11 $\frac{1}{2}$	11	36.00	38.50
8 x 6	15 x 12	11	36.00	38.50
10 x 4	17 $\frac{1}{2}$ x 10	12	57.00	61.00
10 x 5	17 $\frac{1}{2}$ x 11	12	57.00	61.00
10 x 6	17 $\frac{1}{2}$ x 12 $\frac{1}{2}$	12	57.00	61.00
10 x 8	17 $\frac{1}{2}$ x 15	12	57.00	61.00
12 x 5	20 $\frac{1}{2}$ x 11	14	84.00	88.50
12 x 6	20 $\frac{1}{2}$ x 12 $\frac{1}{2}$	14	84.00	88.50
12 x 8	20 $\frac{1}{2}$ x 15	14	84.00	88.50
12 x 10	20 $\frac{1}{2}$ x 17 $\frac{1}{2}$	14	84.00	88.50
14 x 6	23 x 12 $\frac{1}{2}$	16	105.00	110.50
14 x 8	23 x 15	16	105.00	110.50
14 x 10	23 x 17 $\frac{1}{2}$	16	105.00	110.50
14 x 12	23 x 20 $\frac{1}{2}$	16	105.00	110.50
15 x 8	24 $\frac{1}{2}$ x 15	17	120.00	127.00
15 x 10	24 $\frac{1}{2}$ x 17 $\frac{1}{2}$	17	120.00	127.00
15 x 12	24 $\frac{1}{2}$ x 20 $\frac{1}{2}$	17	120.00	127.00
15 x 14	24 $\frac{1}{2}$ x 23	17	120.00	127.00
16 x 8	25 $\frac{1}{2}$ x 15	18	135.00	143.00
16 x 10	25 $\frac{1}{2}$ x 17 $\frac{1}{2}$	18	135.00	143.00
16 x 12	25 $\frac{1}{2}$ x 20 $\frac{1}{2}$	18	135.00	143.00
16 x 14	25 $\frac{1}{2}$ x 23	18	135.00	143.00
18 x 10	28 x 17 $\frac{1}{2}$	19	157.00	166.00
18 x 12	28 x 20 $\frac{1}{2}$	19	157.00	166.00
18 x 14	28 x 23	19	157.00	166.00
18 x 16	28 x 25 $\frac{1}{2}$	19	157.00	166.00
20 x 12	30 $\frac{1}{2}$ x 20 $\frac{1}{2}$	20	180.00	190.00
20 x 14	30 $\frac{1}{2}$ x 23	20	180.00	190.00
20 x 16	30 $\frac{1}{2}$ x 25 $\frac{1}{2}$	20	180.00	190.00
20 x 18	30 $\frac{1}{2}$ x 28	20	180.00	190.00
22 x 14	33 x 23	22	225.00	238.00
22 x 16	33 x 25 $\frac{1}{2}$	22	225.00	238.00
22 x 18	33 x 28	22	225.00	238.00
22 x 20	33 x 30 $\frac{1}{2}$	22	225.00	238.00
24 x 16	36 x 25 $\frac{1}{2}$	24	285.00	300.00
24 x 18	36 x 28	24	285.00	300.00
24 x 20	36 x 30 $\frac{1}{2}$	24	285.00	300.00
24 x 22	36 x 33	24	285.00	300.00

Taper reducers of any other dimensions special on order.

**Eccentric Taper Reducers**

Eccentric taper reducers furnished on special order  
Prices upon application.



## Standard Companion Flanges

125 Pounds Steam Working Pressure

No. 523, Back View  
Showing Hub

No. 522, Smooth Face



No. 524, Blind Flange

## Cast Iron Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 x 4 <sup>1</sup> / <sub>4</sub>	\$ .55	\$ .80	8x13 <sup>1</sup> / <sub>2</sub>	\$3.10	\$3.80
1 <sup>1</sup> / <sub>4</sub> x 4 <sup>5</sup> / <sub>8</sub>	.60	.85	9x15	3.85	4.65
1 <sup>1</sup> / <sub>2</sub> x 5	.65	.90	10x16	4.50	5.50
2 x 6	.75	1.00	12x19	6.50	7.65
2 <sup>1</sup> / <sub>2</sub> x 7	.85	1.10	14x21	9.00	10.35
3 x 7 <sup>1</sup> / <sub>2</sub>	.95	1.25	15x21	11.50	13.20
3 <sup>1</sup> / <sub>2</sub> x 8 <sup>1</sup> / <sub>2</sub>	1.20	1.55	15x22 <sup>1</sup> / <sub>4</sub>	11.50	13.20
4 x 9	1.35	1.80	16x23 <sup>1</sup> / <sub>2</sub>	13.50	15.30
4 <sup>1</sup> / <sub>2</sub> x 9 <sup>1</sup> / <sub>4</sub>	1.45	1.90	18x25	16.00	18.00
5 x 10	1.60	2.05	20x27 <sup>1</sup> / <sub>2</sub>	19.00	21.50
6 x 11	2.00	2.50	22x29 <sup>1</sup> / <sub>2</sub>	22.00	25.00
7 x 12 <sup>1</sup> / <sub>2</sub>	2.65	3.25	24x32	27.00	30.50

## Malleable Iron Flanges

Double list of cast iron flanges. Made in sizes 2x6 to 16x23<sup>1</sup>/<sub>2</sub> inches only.

## Semi-Steel Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 x 4 <sup>1</sup> / <sub>4</sub>	\$ .70	\$1.00	8x13 <sup>1</sup> / <sub>2</sub>	\$3.90	\$4.75
1 <sup>1</sup> / <sub>4</sub> x 4 <sup>5</sup> / <sub>8</sub>	.75	1.05	9x15	4.80	5.80
1 <sup>1</sup> / <sub>2</sub> x 5	.80	1.10	10x16	5.65	6.85
2 x 6	.95	1.25	12x19	8.15	9.55
2 <sup>1</sup> / <sub>2</sub> x 7	1.05	1.35	14x21	11.25	13.00
3 x 7 <sup>1</sup> / <sub>2</sub>	1.20	1.55	15x21	14.50	16.50
3 <sup>1</sup> / <sub>2</sub> x 8 <sup>1</sup> / <sub>2</sub>	1.50	1.95	15x22 <sup>1</sup> / <sub>4</sub>	14.50	16.50
4 x 9	1.70	2.25	16x23 <sup>1</sup> / <sub>2</sub>	17.00	19.00
4 <sup>1</sup> / <sub>2</sub> x 9 <sup>1</sup> / <sub>4</sub>	1.80	2.35	18x25	20.00	22.50
5 x 10	2.00	2.55	20x27 <sup>1</sup> / <sub>2</sub>	24.00	27.00
6 x 11	2.50	3.10	22x29 <sup>1</sup> / <sub>2</sub>	27.50	31.00
7 x 12 <sup>1</sup> / <sub>2</sub>	3.30	4.05	24x32	34.00	38.00

## \*Cast Steel Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
14x21	\$55.50	\$63.00	18x25	\$98.00	\$110.00
15x21	64.00	74.00	20x27 <sup>1</sup> / <sub>2</sub>	117.00	130.00
15x22 <sup>1</sup> / <sub>4</sub>	64.00	74.00	22x29 <sup>1</sup> / <sub>2</sub>	140.00	155.00
16x23 <sup>1</sup> / <sub>2</sub>	78.00	89.00	24x32	165.00	180.00

Furnished with bolt holes spot faced, when ordered faced and drilled, at prices given for faced and drilled.

## \*Forged Steel Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 x 4 <sup>1</sup> / <sub>4</sub>	\$7.50	\$8.00	5x10	\$22.30	\$24.00
1 <sup>1</sup> / <sub>4</sub> x 4 <sup>5</sup> / <sub>8</sub>	8.40	9.00	6x11	25.40	27.00
1 <sup>1</sup> / <sub>2</sub> x 5	9.40	10.00	7x12 <sup>1</sup> / <sub>2</sub>	27.20	32.00
2 x 6	10.40	11.00	8x13 <sup>1</sup> / <sub>2</sub>	32.00	35.00
2 <sup>1</sup> / <sub>2</sub> x 7	11.80	13.00	9x15	37.00	40.00
3 x 7 <sup>1</sup> / <sub>2</sub>	13.70	15.00	10x16	45.00	48.00
3 <sup>1</sup> / <sub>2</sub> x 8 <sup>1</sup> / <sub>2</sub>	17.60	19.00	12x19	56.00	60.00
4 x 9	18.30	20.00	14x21	75.50	80.00
4 <sup>1</sup> / <sub>2</sub> x 9 <sup>1</sup> / <sub>4</sub>	20.30	22.00	.....	.....	.....

## Cast Iron Blind Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
2 x 6	\$1.15	\$1.40	14x21	\$13.50	\$14.85
2 <sup>1</sup> / <sub>2</sub> x 7	1.30	1.55	15x22 <sup>1</sup> / <sub>4</sub>	17.00	18.70
3 x 7 <sup>1</sup> / <sub>2</sub>	1.40	1.70	16x23 <sup>1</sup> / <sub>2</sub>	20.00	21.80
3 <sup>1</sup> / <sub>2</sub> x 8 <sup>1</sup> / <sub>2</sub>	1.80	2.15	18x25	24.00	26.00
4 x 9	2.00	2.45	20x27 <sup>1</sup> / <sub>2</sub>	28.00	30.50
4 <sup>1</sup> / <sub>2</sub> x 9 <sup>1</sup> / <sub>4</sub>	2.20	2.65	22x29 <sup>1</sup> / <sub>2</sub>	33.00	36.00
5 x 10	2.40	2.85	24x32	40.00	43.50
6 x 11	3.00	3.50	26x34 <sup>1</sup> / <sub>4</sub>	62.50	70.00
7 x 12 <sup>1</sup> / <sub>2</sub>	4.00	4.60	28x36 <sup>1</sup> / <sub>2</sub>	77.50	85.00
8 x 13 <sup>1</sup> / <sub>2</sub>	4.60	5.30	30x38 <sup>3</sup> / <sub>4</sub>	90.00	100.00
9 x 15	5.75	6.55	32x41 <sup>3</sup> / <sub>4</sub>	110.00	120.00
10 x 16	6.75	7.75	34x43 <sup>3</sup> / <sub>4</sub>	122.50	135.00
12 x 19	9.75	10.90	36x46	137.50	150.00

\*Furnished with 1/16-inch raised face.

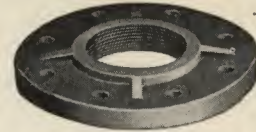
Other Standard Flanges, smooth faced. All flanges furnished faced only, unless otherwise ordered.

Spot facing bolt holes, 10 cents per hole.

## Standard Reducing Cast Iron Companion Flanges

For Standard Flanged Valves and Fittings

125 Pounds Steam Working Pressure



No. 529

These flanges, used in connection with straight or reducing fittings, make it possible to fill orders for reduced sizes more promptly. Customers who desire fittings reduced in this manner will please specify, "Reduce by Flanges if Necessary."

They will always be of the same thickness as the regular companion flanges of corresponding outside diameter, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

In ordering reducing companion flanges, always give the screwed or reduced size first, then the outside diameter of flange wanted; for instance, if a reducing flange is wanted to connect a 6-inch pipe to a 9-inch flanged valve or fitting having a 15-inch outside diameter flange, order a 6x15-inch reducing flange. This will clearly avoid the confusion often caused by orders incorrectly calling for a 9x6 or 6x9-inch flange.

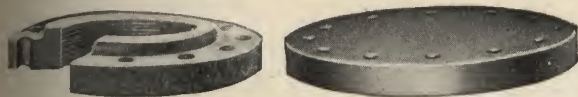
Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 <sup>1</sup> / <sub>4</sub> x 6	\$1.30	\$1.55	6x12 <sup>1</sup> / <sub>2</sub>	\$4.40	\$5.00
1 <sup>1</sup> / <sub>2</sub> x 6	1.30	1.55	6x13 <sup>1</sup> / <sub>2</sub>	5.10	5.80
1 <sup>1</sup> / <sub>2</sub> x 7	1.45	1.70	6x15	6.35	7.15
1 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>2</sub>	1.55	1.85	6x16	7.45	8.45
2 x 7	1.45	1.70	6x19	10.75	11.90
2 x 7 <sup>1</sup> / <sub>2</sub>	1.55	1.85	7x13 <sup>1</sup> / <sub>2</sub>	5.10	5.80
2 x 8 <sup>1</sup> / <sub>2</sub>	2.00	2.35	7x15	6.35	7.15
2 x 9	2.20	2.65	7x16	7.45	8.45
2 x 10	2.65	3.10	7x19	10.75	11.90
2 x 11	3.30	3.80	8x15	6.35	7.15
2 x 13 <sup>1</sup> / <sub>2</sub>	5.10	5.80	8x16	7.45	8.45
2 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>2</sub>	1.55	1.85	8x19	10.75	11.90
2 <sup>1</sup> / <sub>2</sub> x 8 <sup>1</sup> / <sub>2</sub>	2.00	2.35	8x21	15.00	16.35
2 <sup>1</sup> / <sub>2</sub> x 9	2.20	2.65	8x22 <sup>1</sup> / <sub>4</sub>	19.00	20.70
2 <sup>1</sup> / <sub>2</sub> x 9 <sup>1</sup> / <sub>4</sub>	2.40	2.85	9x16	7.45	8.45
2 <sup>1</sup> / <sub>2</sub> x 10	2.65	3.10	9x19	10.75	11.90
2 <sup>1</sup> / <sub>2</sub> x 11	3.30	3.80	9x21	15.00	16.35
2 <sup>1</sup> / <sub>2</sub> x 13 <sup>1</sup> / <sub>2</sub>	5.10	5.80	10x19	10.75	11.90
2 <sup>1</sup> / <sub>2</sub> x 16	7.45	8.45	10x21	15.00	16.35
3 x 8 <sup>1</sup> / <sub>2</sub>	2.00	2.35	10x22 <sup>1</sup> / <sub>4</sub>	19.00	20.70
3 x 9	2.20	2.65	10x23 <sup>1</sup> / <sub>2</sub>	22.00	23.80
3 x 9 <sup>1</sup> / <sub>4</sub>	2.40	2.85	12x21	15.00	16.35
3 x 10	2.65	3.10	12x22 <sup>1</sup> / <sub>4</sub>	19.00	20.70
3 x 11	3.30	3.80	12x23 <sup>1</sup> / <sub>2</sub>	22.00	23.80
3 x 13 <sup>1</sup> / <sub>2</sub>	5.10	5.80	12x25	26.50	28.50
3 x 16	7.45	8.45	14x22 <sup>1</sup> / <sub>4</sub>	19.00	20.70
3 <sup>1</sup> / <sub>2</sub> x 9	2.20	2.65	14x23 <sup>1</sup> / <sub>2</sub>	22.00	23.80
3 <sup>1</sup> / <sub>2</sub> x 9 <sup>1</sup> / <sub>4</sub>	2.40	2.85	14x25	26.50	28.50
3 <sup>1</sup> / <sub>2</sub> x 10	2.65	3.10	14x27 <sup>1</sup> / <sub>2</sub>	31.00	33.50
3 <sup>1</sup> / <sub>2</sub> x 11	3.30	3.80	14x32	44.00	47.50
3 <sup>1</sup> / <sub>2</sub> x 16	7.45	8.45	15x23 <sup>1</sup> / <sub>2</sub>	22.00	23.80
4 x 9 <sup>1</sup> / <sub>4</sub>	2.40	2.85	15x25	26.50	28.50
4 x 10	2.65	3.10	15x27 <sup>1</sup> / <sub>2</sub>	31.00	33.50
4 x 11	3.30	3.80	15x29 <sup>1</sup> / <sub>2</sub>	36.00	39.00
4 x 12 <sup>1</sup> / <sub>2</sub>	4.40	5.00	16x25	26.50	28.50
4 x 13 <sup>1</sup> / <sub>2</sub>	5.10	5.80	16x27 <sup>1</sup> / <sub>2</sub>	31.00	33.50
4 x 16	7.45	8.45	16x29 <sup>1</sup> / <sub>2</sub>	36.00	39.00
4 <sup>1</sup> / <sub>2</sub> x 10	2.65	3.10	16x32	44.00	47.50
4 <sup>1</sup> / <sub>2</sub> x 11	3.30	3.80	18x27 <sup>1</sup> / <sub>2</sub>	31.00	33.50
4 <sup>1</sup> / <sub>2</sub> x 12 <sup>1</sup> / <sub>2</sub>	4.40	5.00	18x29 <sup>1</sup> / <sub>2</sub>	36.00	39.00
5 x 11	3.30	3.80	18x32	44.00	47.50
5 x 12 <sup>1</sup> / <sub>2</sub>	4.40	5.00	20x29 <sup>1</sup> / <sub>2</sub>	36.00	39.00
5 x 13 <sup>1</sup> / <sub>2</sub>	5.10	5.80	20x32	44.00	47.50
5 x 16	7.45	8.45	.....	.....	.....

Companion flanges are always furnished faced only, unless otherwise specified.



## Extra Heavy Companion Flanges

250 Pounds Steam Working Pressure



No. 554, Back View Showing Hub

No. 555, Blind Flange

## Cast Iron Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 x 4 <sup>7</sup> / <sub>8</sub>	\$.95	\$1.30	8x15	\$5.10	\$6.15
1 <sup>1</sup> / <sub>4</sub> x 5 <sup>1</sup> / <sub>4</sub>	1.00	1.35	9x16 <sup>1</sup> / <sub>4</sub>	6.30	7.50
1 <sup>1</sup> / <sub>2</sub> x 6 <sup>1</sup> / <sub>8</sub>	1.10	1.45	10x17 <sup>1</sup> / <sub>2</sub>	7.40	8.90
2 x 6 <sup>1</sup> / <sub>2</sub>	1.25	1.60	12x20 <sup>1</sup> / <sub>2</sub>	10.75	12.50
2 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>2</sub>	1.40	1.75	14x23	15.00	17.00
3 x 8 <sup>1</sup> / <sub>4</sub>	1.60	2.05	15x24 <sup>1</sup> / <sub>2</sub>	19.00	21.50
3 <sup>1</sup> / <sub>2</sub> x 9	2.00	2.55	16x25 <sup>1</sup> / <sub>2</sub>	22.25	25.00
4 x 10	2.25	2.95	18x28	26.00	29.00
4 <sup>1</sup> / <sub>2</sub> x 10 <sup>1</sup> / <sub>2</sub>	2.40	3.10	20x30 <sup>1</sup> / <sub>2</sub>	31.00	35.00
5 x 11	2.65	3.35	22x33	36.00	41.00
6 x 12 <sup>1</sup> / <sub>2</sub>	3.30	4.05	24x36	45.00	50.00
7 x 14	4.40	5.30	.....	.....	.....

## Malleable Iron Flanges

Double list of cast iron. Made in sizes 1<sup>1</sup>/<sub>2</sub>x6 to 16x25<sup>1</sup>/<sub>2</sub> inches only.

## Semi-Steel Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 x 4 <sup>7</sup> / <sub>8</sub>	\$1.20	\$1.65	8x15	\$6.40	\$7.70
1 <sup>1</sup> / <sub>4</sub> x 5 <sup>1</sup> / <sub>4</sub>	1.25	1.70	9x16 <sup>1</sup> / <sub>4</sub>	7.90	9.40
1 <sup>1</sup> / <sub>2</sub> x 6 <sup>1</sup> / <sub>8</sub>	1.35	1.80	10x17 <sup>1</sup> / <sub>2</sub>	9.25	11.00
2 x 6 <sup>1</sup> / <sub>2</sub>	1.55	2.00	12x20 <sup>1</sup> / <sub>2</sub>	13.50	15.50
2 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>2</sub>	1.75	2.20	14x23	18.50	21.00
3 x 8 <sup>1</sup> / <sub>4</sub>	2.00	2.55	15x24 <sup>1</sup> / <sub>2</sub>	24.00	27.00
3 <sup>1</sup> / <sub>2</sub> x 9	2.50	3.20	16x25 <sup>1</sup> / <sub>2</sub>	28.00	31.00
4 x 10	2.80	3.70	18x28	32.50	36.00
4 <sup>1</sup> / <sub>2</sub> x 10 <sup>1</sup> / <sub>2</sub>	3.00	3.90	20x30 <sup>1</sup> / <sub>2</sub>	39.00	44.00
5 x 11	3.30	4.20	22x33	45.00	51.00
6 x 12 <sup>1</sup> / <sub>2</sub>	4.10	5.05	24x36	56.00	62.00
7 x 14	5.50	6.60	.....	.....	.....

## Cast Steel Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
14x23	\$55.50	\$65.00	20x30 <sup>1</sup> / <sub>2</sub>	\$117.00	\$131.00
15x24 <sup>1</sup> / <sub>2</sub>	64.00	75.00	22x33	140.00	157.50
16x25 <sup>1</sup> / <sub>2</sub>	78.00	90.00	24x36	165.00	182.00
18x28	98.00	111.00	.....	.....	.....

Furnished with bolt holes spot faced, when ordered faced and drilled, at price given for faced and drilled.

## Forged Steel Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 x 4 <sup>7</sup> / <sub>8</sub>	\$7.50	\$8.00	7x14	\$27.20	\$32.00
1 <sup>1</sup> / <sub>4</sub> x 5 <sup>1</sup> / <sub>4</sub>	8.40	9.00	8x15	32.00	35.00
1 <sup>1</sup> / <sub>2</sub> x 6 <sup>1</sup> / <sub>8</sub>	9.40	10.00	9x16 <sup>1</sup> / <sub>4</sub>	37.00	40.00
2 x 6 <sup>1</sup> / <sub>2</sub>	10.40	11.00	10x17 <sup>1</sup> / <sub>2</sub>	45.00	48.00
2 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>2</sub>	11.80	13.00	12x20 <sup>1</sup> / <sub>2</sub>	56.00	60.00
3 x 8 <sup>1</sup> / <sub>4</sub>	13.70	15.00	14x23	75.50	80.00
3 <sup>1</sup> / <sub>2</sub> x 9	17.60	19.00	15x24 <sup>1</sup> / <sub>2</sub>	84.00	90.00
4 x 10	18.30	20.00	16x25 <sup>1</sup> / <sub>2</sub>	93.00	100.00
4 <sup>1</sup> / <sub>2</sub> x 10 <sup>1</sup> / <sub>2</sub>	20.30	22.00	18x28	118.00	125.00
5 x 11	22.30	24.00	20x30 <sup>1</sup> / <sub>2</sub>	142.00	150.00
6 x 12 <sup>1</sup> / <sub>2</sub>	25.40	27.00	.....	.....	.....

## Cast Iron Blind Flanges

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 <sup>1</sup> / <sub>2</sub> x 6 <sup>1</sup> / <sub>8</sub>	\$1.65	\$2.00	9x16 <sup>1</sup> / <sub>4</sub>	\$9.50	\$10.70
2 x 6 <sup>1</sup> / <sub>2</sub>	1.90	2.25	10x17 <sup>1</sup> / <sub>2</sub>	11.00	12.50
2 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>2</sub>	2.10	2.45	12x20 <sup>1</sup> / <sub>2</sub>	16.00	17.75
3 x 8 <sup>1</sup> / <sub>4</sub>	2.40	2.85	14x23	22.50	24.50
3 <sup>1</sup> / <sub>2</sub> x 9	3.00	3.55	15x24 <sup>1</sup> / <sub>2</sub>	28.50	31.00
4 x 10	3.35	4.05	16x25 <sup>1</sup> / <sub>2</sub>	33.50	36.25
4 <sup>1</sup> / <sub>2</sub> x 10 <sup>1</sup> / <sub>2</sub>	3.60	4.30	18x28	39.00	42.00
5 x 11	4.00	4.70	20x30 <sup>1</sup> / <sub>2</sub>	46.00	50.00
6 x 12 <sup>1</sup> / <sub>2</sub>	5.00	5.75	22x33	54.00	59.00
7 x 14	6.60	7.50	24x36	67.00	72.00
8 x 15	7.65	8.70	.....	.....	.....

Furnished faced only, unless otherwise ordered.

Sizes 14-inch and larger are tapped to be used with O. D. pipe of the same sizes.

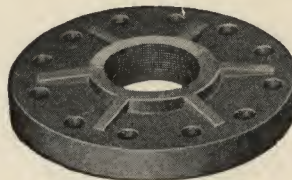
Cast steel flanges, sizes 1 to 12 inches, inclusive, can be furnished when so ordered. Prices upon application.

Spot facing bolt holes, 10 cents per hole.

## Extra Heavy Cast Iron Reducing Companion Flanges

For Extra Heavy Flanged Valves and Fittings

250 Pounds Steam Working Pressure



No. 560

These flanges used in connection with straight or reducing fittings, make it possible to fill orders more promptly. Customers who desire fittings reduced in this manner will please specify "Reduce by Flanges if Necessary."

These flanges will always be of the same thickness as the regular companion flanges of corresponding outside diameters, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

In ordering reducing companion flanges always give the screwed or reduced size first, then the outside diameter of flange wanted; for instance, if a reducing flange is wanted to connect a 6-inch pipe to a 9-inch flanged valve or fitting having a 16<sup>1</sup>/<sub>4</sub>-inch O. D. flange, order a 6x16<sup>1</sup>/<sub>4</sub>-inch reducing flange. This will clearly avoid the confusion often caused by orders incorrectly calling for a 9x6 or a 6x9-inch flange.

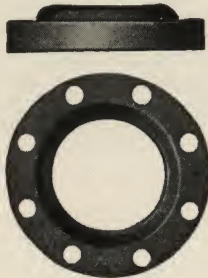
Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Faced Only	Faced and Drilled		Faced Only	Faced and Drilled
1 <sup>1</sup> / <sub>4</sub> x 6 <sup>1</sup> / <sub>8</sub>	\$1.80	\$2.15	6x14	\$7.25	\$8.15
1 <sup>1</sup> / <sub>2</sub> x 6 <sup>1</sup> / <sub>2</sub>	2.10	2.45	6x15	8.40	9.45
1 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>2</sub>	2.30	2.65	6x16 <sup>1</sup> / <sub>4</sub>	10.50	11.70
1 <sup>1</sup> / <sub>2</sub> x 8 <sup>1</sup> / <sub>4</sub>	2.65	3.10	6x17 <sup>1</sup> / <sub>2</sub>	12.00	13.50
2 x 7 <sup>1</sup> / <sub>2</sub>	2.30	2.65	6x20 <sup>1</sup> / <sub>2</sub>	17.50	19.25
2 x 8 <sup>1</sup> / <sub>4</sub>	2.65	3.10	7x15	8.40	9.45
2 x 9	3.30	3.85	7x16 <sup>1</sup> / <sub>4</sub>	10.50	11.70
2 x 10	3.70	4.40	7x17 <sup>1</sup> / <sub>2</sub>	12.00	13.50
2 x 10 <sup>1</sup> / <sub>2</sub>	4.00	4.70	7x20 <sup>1</sup> / <sub>2</sub>	17.50	19.25
2 x 11	4.40	5.10	8x16 <sup>1</sup> / <sub>4</sub>	10.50	11.70
2 x 12 <sup>1</sup> / <sub>2</sub>	5.50	6.25	8x17 <sup>1</sup> / <sub>2</sub>	12.00	13.50
2 <sup>1</sup> / <sub>2</sub> x 8 <sup>1</sup> / <sub>4</sub>	2.65	3.10	8x20 <sup>1</sup> / <sub>2</sub>	17.50	19.25
2 <sup>1</sup> / <sub>2</sub> x 9	3.30	3.85	8x23	25.00	27.00
2 <sup>1</sup> / <sub>2</sub> x 10	3.70	4.40	8x24 <sup>1</sup> / <sub>2</sub>	31.50	34.00
2 <sup>1</sup> / <sub>2</sub> x 10 <sup>1</sup> / <sub>2</sub>	4.00	4.70	9x17 <sup>1</sup> / <sub>2</sub>	12.00	13.50
2 <sup>1</sup> / <sub>2</sub> x 11	4.40	5.10	9x20 <sup>1</sup> / <sub>2</sub>	17.50	19.25
2 <sup>1</sup> / <sub>2</sub> x 12 <sup>1</sup> / <sub>2</sub>	5.50	6.25	9x23	25.00	27.00
3 x 9	3.30	3.85	10x20 <sup>1</sup> / <sub>2</sub>	17.50	19.25
3 x 10	3.70	4.40	10x23	25.00	27.00
3 x 10 <sup>1</sup> / <sub>2</sub>	4.00	4.70	10x24 <sup>1</sup> / <sub>2</sub>	31.50	34.00
3 x 11	4.40	5.10	10x25 <sup>1</sup> / <sub>2</sub>	37.00	39.75
3 x 12 <sup>1</sup> / <sub>2</sub>	5.50	6.25	12x23	25.00	27.00
3 x 15	8.40	9.45	12x24 <sup>1</sup> / <sub>2</sub>	31.50	34.00
3 <sup>1</sup> / <sub>2</sub> x 10	3.70	4.40	12x25 <sup>1</sup> / <sub>2</sub>	37.00	39.75
3 <sup>1</sup> / <sub>2</sub> x 10 <sup>1</sup> / <sub>2</sub>	4.00	4.70	12x28	43.00	46.00
3 <sup>1</sup> / <sub>2</sub> x 11	4.40	5.10	14x24 <sup>1</sup> / <sub>2</sub>	31.50	34.00
3 <sup>1</sup> / <sub>2</sub> x 15	8.40	9.45	14x25 <sup>1</sup> / <sub>2</sub>	37.00	39.75
4 x 10 <sup>1</sup> / <sub>2</sub>	4.00	4.70	14x28	43.00	46.00
4 x 11	4.40	5.10	14x30 <sup>1</sup> / <sub>2</sub>	51.00	55.00
4 x 12 <sup>1</sup> / <sub>2</sub>	5.50	6.25	15x25 <sup>1</sup> / <sub>2</sub>	37.00	39.75
4 x 15	8.40	9.45	15x28	34.00	46.00
4 x 16 <sup>1</sup> / <sub>4</sub>	10.50	11.70	15x30 <sup>1</sup> / <sub>2</sub>	51.00	55.00
4 <sup>1</sup> / <sub>2</sub> x 11	4.40	5.10	16x28	43.00	46.00
4 <sup>1</sup> / <sub>2</sub> x 12 <sup>1</sup> / <sub>2</sub>	5.50	6.25	16x30 <sup>1</sup> / <sub>2</sub>	51.00	55.00
4 <sup>1</sup> / <sub>2</sub> x 14	7.25	8.15	16x33	60.00	65.00
5 x 12 <sup>1</sup> / <sub>2</sub>	5.50	6.25	18x30 <sup>1</sup> / <sub>2</sub>	51.00	55.00
5 x 14	7.25	8.15	18x33	60.00	65.00
5 x 15	8.40	9.45	18x36	74.00	79.00
5 x 16 <sup>1</sup> / <sub>4</sub>	10.50	11.70	20x33	60.00	65.00
5 x 17 <sup>1</sup> / <sub>2</sub>	12.00	13.50	20x36	74.00	79.00

Companion flanges are always furnished faced only, unless otherwise ordered.



### Templates for Drilling Standard and Low Pressure Flanged Valves and Fittings

Prices for Drilling Standard Valves  
Sizes 1 to 48-Inch, Inclusive



No. 530

These drilling templates are in multiples of four, so that fittings may be made to face in any quarter, and bolt holes straddle the center line.

They can be drilled to any other template, if so desired.

Bolt holes are drilled  $\frac{1}{8}$  inch larger than nominal diameter of bolts.

Size In.	Diam. Flanges In.	Thick- ness Flanges In.	Bolt Circle In.	No. Bolts	Size Bolts In.	Bolt Lengths In.	PRICE, EACH FOR DRILLING Valves With Two Flanges Except		
							Angle Valves	Angle Valves	Cross Safety Valves
1	4 $\frac{1}{4}$	$\frac{7}{16}$	3 $\frac{1}{8}$	4	$\frac{1}{2}$	1 $\frac{1}{2}$	\$.60	\$1.00	\$1.20
1 $\frac{1}{4}$	4 $\frac{5}{8}$	$\frac{1}{2}$	3 $\frac{1}{2}$	4	$\frac{1}{2}$	1 $\frac{1}{2}$	.60	1.90	1.20
1 $\frac{1}{2}$	5	$\frac{9}{16}$	3 $\frac{3}{8}$	4	$\frac{1}{2}$	1 $\frac{3}{4}$	.60	1.00	1.20
2	6	$\frac{5}{8}$	4 $\frac{3}{4}$	4	$\frac{5}{8}$	2	.75	1.25	1.50
2 $\frac{1}{2}$	7	$\frac{11}{16}$	5 $\frac{1}{2}$	4	$\frac{5}{8}$	2 $\frac{1}{4}$	.75	1.25	1.50
3	7 $\frac{1}{2}$	$\frac{3}{4}$	6	4	$\frac{5}{8}$	2 $\frac{1}{4}$	.75	1.25	1.50
3 $\frac{1}{2}$	8 $\frac{1}{2}$	$\frac{13}{16}$	7	8	$\frac{5}{8}$	2 $\frac{1}{2}$	1.00	1.50	2.00
4	9	$\frac{15}{16}$	7 $\frac{1}{2}$	8	$\frac{5}{8}$	2 $\frac{3}{4}$	1.25	1.75	2.50
4 $\frac{1}{2}$	9 $\frac{1}{4}$	$\frac{15}{16}$	7 $\frac{3}{4}$	8	$\frac{3}{4}$	2 $\frac{3}{4}$	1.50	2.00	3.00
5	10	$\frac{15}{16}$	8 $\frac{1}{2}$	8	$\frac{3}{4}$	2 $\frac{3}{4}$	1.50	2.00	3.00
6	11	1	9 $\frac{1}{2}$	8	$\frac{3}{4}$	3	1.75	2.50	3.50
7	12 $\frac{1}{2}$	$\frac{11}{16}$	10 $\frac{3}{4}$	8	$\frac{3}{4}$	3	2.25	3.00	4.50
8	13 $\frac{1}{2}$	$\frac{11}{8}$	11 $\frac{3}{4}$	8	$\frac{3}{4}$	3 $\frac{1}{4}$	2.25	3.00	4.50
9	15	$\frac{11}{8}$	13 $\frac{1}{4}$	12	$\frac{3}{4}$	3 $\frac{1}{4}$	2.50	3.50	5.00
10	16	$\frac{13}{16}$	14 $\frac{1}{4}$	12	$\frac{7}{8}$	3 $\frac{1}{2}$	2.50	3.50	5.00
12	19	$\frac{11}{4}$	17	12	$\frac{7}{8}$	3 $\frac{1}{2}$	3.50	5.00	7.00
14	21	$\frac{13}{8}$	18 $\frac{3}{4}$	12	1	4	4.00	6.00	....
15	22 $\frac{1}{4}$	$\frac{13}{8}$	20	16	1	4	4.50	6.50	....
16	23 $\frac{1}{2}$	$\frac{17}{16}$	21 $\frac{1}{4}$	16	1	4	5.00	7.00	....
18	25	$\frac{19}{16}$	22 $\frac{3}{4}$	16	1 $\frac{1}{8}$	4 $\frac{1}{2}$	6.00	10.00	....
20	27 $\frac{1}{2}$	$\frac{11}{16}$	25	20	1 $\frac{1}{8}$	4 $\frac{3}{4}$	7.50	12.00	....
22	29 $\frac{1}{2}$	$\frac{11}{16}$	27 $\frac{1}{4}$	20	1 $\frac{1}{4}$	5	9.00	14.00	....
24	32	$\frac{17}{8}$	29 $\frac{1}{2}$	20	1 $\frac{1}{4}$	5 $\frac{1}{4}$	10.00	16.00	....
26	34 $\frac{1}{4}$	2	31 $\frac{3}{4}$	24	1 $\frac{1}{4}$	5 $\frac{1}{2}$	11.00	18.00	....
28	36 $\frac{1}{2}$	$\frac{21}{16}$	34	28	1 $\frac{1}{4}$	5 $\frac{1}{2}$	12.00	20.00	....
30	38 $\frac{3}{4}$	$\frac{21}{8}$	36	28	1 $\frac{1}{4}$	5 $\frac{3}{4}$	12.00	22.00	....
32	41 $\frac{3}{4}$	$\frac{21}{4}$	38 $\frac{1}{2}$	28	1 $\frac{1}{2}$	6 $\frac{1}{4}$	12.00	22.00	....
34	43 $\frac{3}{4}$	$\frac{23}{16}$	40 $\frac{1}{2}$	32	1 $\frac{1}{2}$	6 $\frac{1}{2}$	14.00	24.00	....
36	46	$\frac{23}{8}$	42 $\frac{3}{4}$	32	1 $\frac{1}{2}$	6 $\frac{1}{2}$	14.00	24.00	....
38	48 $\frac{3}{4}$	$\frac{23}{8}$	45 $\frac{1}{4}$	32	1 $\frac{5}{8}$	6 $\frac{3}{4}$	....	....	....
40	50 $\frac{3}{4}$	$\frac{21}{2}$	47 $\frac{1}{4}$	36	1 $\frac{5}{8}$	7	....	....	....
42	53	$\frac{25}{8}$	49 $\frac{1}{2}$	36	1 $\frac{1}{2}$	7 $\frac{1}{4}$	25.00	....	....
44	55 $\frac{1}{4}$	$\frac{25}{8}$	51 $\frac{3}{4}$	40	1 $\frac{5}{8}$	7 $\frac{1}{4}$	....	....	....
46	57 $\frac{1}{4}$	$\frac{21}{16}$	52 $\frac{3}{4}$	40	1 $\frac{5}{8}$	7 $\frac{1}{2}$	....	....	....
48	59 $\frac{1}{2}$	$\frac{23}{4}$	56	44	1 $\frac{1}{2}$	7 $\frac{1}{2}$	30.00	....	....

Bolt holes are spot faced only when so ordered except cast steel, which are always furnished spot faced.

### Templates for Drilling Extra Heavy Flanged Valves and Fittings

Prices for Drilling Extra Heavy Valves  
Sizes 1 to 48-Inch Inclusive



No. 561

These drilling templates are in multiples of four, so that fittings may be made to face in any quarter, and bolt holes straddle the center line.

They can be drilled to any other template, if so desired.

Bolt holes are drilled  $\frac{1}{8}$  inch larger than nominal diameter of bolts.

Size Inches	Diam. Flanges Inches	Thick- ness Flanges Inches	Bolt Circle Inches	No. of Bolts	Size Bolts Inches	Bolt Lengths Inches	PRICE EACH FOR DRILLING Valves With Two Flanges Except		
							Angle Valves	Angle Valves	Cross Valves
1	4 $\frac{7}{8}$	$\frac{11}{16}$	3 $\frac{1}{2}$	4	$\frac{5}{8}$	2	\$.60	\$1.00	....
1 $\frac{1}{4}$	5 $\frac{1}{4}$	$\frac{3}{4}$	3 $\frac{3}{8}$	4	$\frac{5}{8}$	2 $\frac{1}{4}$	.60	1.00	....
1 $\frac{1}{2}$	6 $\frac{1}{8}$	$\frac{13}{16}$	4 $\frac{1}{2}$	4	$\frac{3}{4}$	2 $\frac{1}{2}$	.60	1.00	\$1.20
2	6 $\frac{1}{2}$	$\frac{7}{8}$	5	8	$\frac{5}{8}$	2 $\frac{1}{2}$	.75	1.25	1.50
2 $\frac{1}{2}$	7 $\frac{1}{2}$	1	5 $\frac{7}{8}$	8	$\frac{3}{4}$	3	.75	1.25	1.50
3	8 $\frac{1}{4}$	$\frac{11}{8}$	6 $\frac{5}{8}$	8	$\frac{3}{4}$	3 $\frac{1}{4}$	.75	1.25	1.50
3 $\frac{1}{2}$	9	$\frac{13}{16}$	7 $\frac{1}{4}$	8	$\frac{3}{4}$	3 $\frac{1}{4}$	1.00	1.50	2.00
4	10	$\frac{11}{4}$	7 $\frac{7}{8}$	8	$\frac{3}{4}$	3 $\frac{1}{2}$	1.25	1.75	2.50
4 $\frac{1}{2}$	10 $\frac{1}{2}$	$\frac{15}{16}$	8 $\frac{1}{2}$	8	$\frac{3}{4}$	3 $\frac{1}{2}$	1.50	2.00	3.00
5	11	$\frac{13}{8}$	9 $\frac{1}{4}$	8	$\frac{3}{4}$	3 $\frac{3}{4}$	1.50	2.00	3.00
6	12 $\frac{1}{2}$	$\frac{17}{16}$	10 $\frac{5}{8}$	12	$\frac{3}{4}$	3 $\frac{3}{4}$	1.75	2.50	3.50
7	14	$\frac{11}{2}$	11 $\frac{7}{8}$	12	$\frac{7}{8}$	4	2.25	3.00	4.50
8	15	$\frac{15}{8}$	13	12	$\frac{7}{8}$	4 $\frac{1}{4}$	2.25	3.00	4.50
9	16 $\frac{1}{4}$	$\frac{13}{4}$	14	12	1	4 $\frac{3}{4}$	2.50	3.50	5.00
10	17 $\frac{1}{2}$	$\frac{17}{8}$	15 $\frac{1}{4}$	16	1	5	2.50	3.50	5.00
12	20 $\frac{1}{2}$	2	17 $\frac{3}{4}$	16	1 $\frac{1}{8}$	5 $\frac{1}{4}$	3.50	5.00	7.00
14	23	$\frac{21}{8}$	20 $\frac{1}{4}$	20	1 $\frac{1}{8}$	5 $\frac{1}{2}$	4.00	6.00	8.00
15	24 $\frac{1}{2}$	$\frac{23}{16}$	21 $\frac{1}{2}$	20	1 $\frac{1}{4}$	5 $\frac{3}{4}$	4.50	6.50	9.00
16	25 $\frac{1}{2}$	$\frac{21}{4}$	22 $\frac{1}{2}$	20	1 $\frac{1}{4}$	6	5.00	7.00	....
18	28	$\frac{23}{8}$	24 $\frac{3}{4}$	24	1 $\frac{1}{4}$	6 $\frac{1}{4}$	6.00	....	....
20	30 $\frac{1}{2}$	$\frac{21}{2}$	27	24	1 $\frac{1}{4}$	6 $\frac{1}{2}$	7.50	....	....
22	33	$\frac{25}{8}$	29 $\frac{1}{4}$	24	1 $\frac{1}{2}$	7	9.00	....	....
24	36	$\frac{23}{4}$	32	24	1 $\frac{1}{2}$	7 $\frac{1}{2}$	10.00	....	....
26	38 $\frac{1}{4}$	$\frac{21}{16}$	34 $\frac{1}{2}$	28	1 $\frac{5}{8}$	7 $\frac{3}{4}$	....	....	....
28	40 $\frac{3}{4}$	$\frac{21}{16}$	37	28	1 $\frac{5}{8}$	8	....	....	....
30	43	3	39 $\frac{1}{4}$	28	1 $\frac{3}{4}$	8 $\frac{1}{4}$	12.00	....	....
32	45 $\frac{1}{4}$	$\frac{31}{8}$	41 $\frac{1}{2}$	28	1 $\frac{7}{8}$	8 $\frac{1}{2}$	....	....	....
34	47 $\frac{1}{2}$	$\frac{31}{4}$	43 $\frac{1}{2}$	28	1 $\frac{7}{8}$	9	....	....	....
36	50	$\frac{33}{8}$	46	32	2	9 $\frac{1}{4}$	....	....	....
38	52 $\frac{1}{4}$	$\frac{37}{16}$	48	32	1 $\frac{7}{8}$	9 $\frac{1}{4}$	....	....	....
40	54 $\frac{1}{2}$	$\frac{39}{16}$	50 $\frac{1}{4}$	36	1 $\frac{7}{8}$	9 $\frac{1}{2}$	....	....	....
42	57	$\frac{31}{16}$	52 $\frac{3}{4}$	36	2	9 $\frac{3}{4}$	....	....	....
44	59 $\frac{1}{4}$	$\frac{33}{4}$	55	36	2	10	....	....	....
46	61 $\frac{1}{2}$	$\frac{37}{8}$	57 $\frac{1}{4}$	40	2	10 $\frac{1}{4}$	....	....	....
48	65	4	60 $\frac{3}{4}$	40	2	10 $\frac{1}{2}$	....	....	....

Bolt holes are spot faced only when so ordered except cast steel which are always furnished spot faced.



## Standard Cast Iron Flanged Fittings

## List of Sizes

## Reducing Flanged Tees

2	x2	x1½	5x5	x3	7x7	x6	8x	4x	4	12x12x	7
2½	x2½	x2	5x5	x2½	7x7	x5	7x	7x	8	12x12x	6
2½	x2½	x1½	5x5	x2	7x7	x4	6x	6x	8	12x12x	5
2½	x2	x1½	5x5	x1½	7x7	x3½	5x	5x	8	12x12x	4½
3	x3	x2½	5x5	x1¼	7x7	x3	9x	9x	8	12x12x	4
3	x3	x2	5x4	x5	7x7	x2½	9x	9x	7	12x12x	3
3	x3	x1½	5x3	x5	7x7	x2	9x	9x	6	12x12x	2
3	x3	x1¼	5x2½	x5	7x6	x7	9x	9x	5	12x10x12	
3	x3	x1	5x2	x5	7x5	x7	9x	9x	4	12x 8x12	
3	x2½	x3	5x4	x4	7x5	x5	9x	9x	3	12x 6x12	
3	x2½	x2½	5x4	x3	7x4	x7	9x	9x	2½	12x 4x12	
3	x2½	x2	5x4	x2½	7x3	x7	9x	6x	6	12x10x10	
3	x2	x3	5x4	x2	7x6	x6	10x10x	9		12x10x 8	
3	x2	x2½	5x3½	x4	7x6	x5	10x10x	8		12x10x 6	
3	x2	x2	5x3	x3½	6x6	x7	10x10x	7		12x 8x10	
2½	x2½	x3	5x3	x3	5x5	x7	10x10x	6		12x 8x 8	
2½	x3½	x3	4x4	x5	8x8	x7	10x10x	5		12x 8x 6	
3½	x3½	x2½	6x6	x5	8x8	x6	10x10x	4½		12x 6x 8	
3½	x3½	x2	6x6	x4½	8x8	x5	10x10x	4		10x10x12	
3½	x2½	x2½	6x6	x4	8x8	x4½	10x10x	3½		8x 8x12	
4	x4	x3½	6x6	x3½	8x8	x4	10x10x	3		14x14x12	
4	x4	x3	6x6	x3	8x8	x3½	10x10x	2½		14x14x10	
4	x4	x2½	6x6	x2½	8x8	x3	10x10x	2		14x14x 9	
4	x4	x2	6x6	x2	8x8	x2½	10x 8x10			14x14x 8	
4	x4	x1½	6x6	x1½	8x8	x2	10x 7x10			14x14x 7	
4	x4	x1¼	6x5	x6	8x7	x8	10x 6x10			14x14x 6	
4	x3½	x4	6x4	x6	8x6	x8	10x 5x10			14x14x 5	
4	x3	x4	6x3	x6	8x5	x8	10x 4x10			14x14x 4	
4	x2½	x4	6x3	x4	8x4	x8	10x 3x10			14x12x14	
4	x2	x4	6x3	x3	8x3½	x8	10x 8x 8			14x12x12	
4	x3	x3	6x2½	x6	8x3	x8	10x 8x 7			14x10x10	
4	x3	x2½	6x2	x6	8x7	x7	10x 8x 6			10x10x14	
4	x3	x2	6x5	x5	8x7	x6	10x 8x 5			16x16x14	
4	x2½	x3	6x5	x4	8x7	x5	10x 8x 4			16x16x12	
4	x2½	x2½	6x5	x3	8x7	x4	10x 7x 7			16x16x10	
4	x2	x2	6x5	x2½	8x6	x6	10x 6x 8			16x16x 8	
3	x3	x4	6x4	x5	8x6	x5	10x 6x 6			16x16x 7	
2½	x2½	x4	6x4	x4	8x6	x4	8x 8x10			16x16x 6	
1½	x1½	x4	6x4	x3	8x6	x3	8x 6x10			16x12x12	
1½	x1½	x3	6x4	x2½	8x5	x7	6x 6x10			12x12x16	
1½	x1½	x2½	5x5	x6	8x5	x6	12x12x10			.....	
5	x5	x4	5x4	x6	8x5	x5	12x12x 9			.....	
5	x5	x3½	4x4	x6	8x4	x6	12x12x 8			.....	

## Reducing Single Sweep Flanged Tees

4x4x2	6x6x3	8x8x5	8x 6x4	10x6x6
6x6x5	6x6x2½	8x8x3	10x10x6	.....
6x6x4	8x8x6	8x6x6	10x 8x8	.....

## Reducing Double Sweep Flanged Tees

4x4x2	6x6x4	8x 8x6	10x10x6	10x10x4
6x6x5	6x6x3	10x10x8	10x10x5	.....

## Reducing Flanged Crosses

4x4x3	x3	6x6x6x4	8x8x6x6	8x 6x6x6	10x10x5x5
5x5x4	x4	6x6x5x5	8x8x5x5	8x 6x8x6	.....
5x5x3	x3	6x6x4x4	8x8x4x4	10x10x8x8	.....
5x5x2½	x2½	6x6x3x3	8x8x3x3	10x10x6x6	.....

## Reducing Flanged Laterals

4x4x2½	6x6x3	8x8x6	8x8x3	10x10x6
6x6x4	6x6x2½	8x6x6	10x10x8	10x 8x8

The flanges are always drilled to the template corresponding to the outside diameter, unless otherwise ordered.

Customers who desire fittings reduced in this manner will please specify "Reduce by flanges if necessary."

## Prices of Sizes Not Shown

Sizes not covered in the list of sizes will be considered special, and made to order at the following advance in prices, according to the quantity of a size ordered at one time, viz.:

## Add to the Regular List Prices of Reducing Flanged Fittings the Percentage Advances Given Below

Size, Inches	One Piece	Two Pieces	Three Pieces	Four Pieces	Five Pieces	Six or More
3½ and Smaller..	100%	80%	60%	40%	20%	No Advance
4 to 8.....	50%	40%	30%	20%	10%	" "
9 " 10.....	25%	20%	15%	10%	5%	" "

Sizes 12-inch and larger, will be made to order in quantities of one or more of a size, at the regular list and discount.

Double sweep tees are not made reducing on the run.

Furnished faced only, unless otherwise ordered.

## Extra Heavy Cast Iron Reducing Flanged Fittings

## List of Sizes

## Reducing Flanged Tees

2½	x2½	x2	3	x3	x4	6	x5	x4	8x	7x	6	12x12x10
2½	x2½	x1½	2½	x2½	x4	6	x5	x3	8x	7x	5	12x12x 9
2½	x2½	x1¼	2½	x2½	x1¼	6	x5	x2½	8x	6x	7	12x12x 8
2½	x2	x2	4½	x4½	x3	6	x5	x2	8x	6x	6	12x12x 7
			4½	x4½	x2	6	x4	x5	8x	6x	5	12x12x 6
3	x3	x2½	4½	x4	x4½	6	x4	x4	8x	6x	4	12x12x 5
3	x3	x2	6	x4	x3	6	x4	x3	8x	5x	6	12x12x 4
3	x3	x1½	5	x5	x4	6	x3	x3	8x	5x	5	12x12x 3
3	x3	x1¼	5	x5	x3½	5	x5	x3½	8x	4x	6	12x12x2½
3	x3	x1	5	x5	x3	4½	x4½	x6	8x	4x	4	12x10x12
3	x2½	x3	5	x5	x2½	4	x4	x6	6x	6x	8	12x 8x12
3	x2	x3	5	x5	x2				5x	5x	8	12x10x10
3	x1½	x3	5	x5	x1½	7	x7	x6	9x	9x	6	12x10x 8
3	x1¼	x3	5	x4	x5	7	x7	x5	9x	9x	5	12x10x 6
3	x2½	x2½	5	x3	x5	7	x7	x4				12x 8x 8
3	x2	x2	5	x2½	x5				10x10x	8		12x 8x 6
2	x2	x3	5	x4	x4	7	x7	x3	10x10x	7		10x10x12
			5	x4	x3	7	x7	x2	10x10x	6		8x 8x12
			5	x4	x2½	7	x6	x7	10x10x	5		
3½	x3½	x2½	5	x4	x2½	7	x6	x6	10x10x	4½		14x14x12
3½	x3½	x2	5	x3	x4	7	x5	x5	10x10x	4		14x14x10
3½	x2½	x3½	4	x4	x5	6	x6	x7	10x10x	3½		14x14x 8
									10x10x	3		14x14x 7
4	x4	x3½	6	x6	x5	8	x8	x7				14x14x 6
4	x4	x3	6	x6	x4½	8	x8	x6	10x10x	2		14x14x 5
4	x4	x2½	6	x6	x4	8	x8	x5	10x 8x10			14x12x 8
4	x4	x2	6	x6	x3½	8	x8	x4½	10x 6x10			
4	x3	x4	6	x6	x3	8	x8	x4	10x 8x 8			16x16x10
4	x2½	x4	6	x6	x2½	8	x8	x3½	10x 8x 6			16x16x 8
4	x2	x4	6	x6	x2	8	x8	x3	10x 8x 5			16x16x 7
4	x3	x3	6	x5	x6	8	x8	x2½	10x 6x 8			16x16x 6
4	x3	x2	6	x4	x6	8	x8	x2	10x 6x 6			.....
4	x3	x1½	6	x3	x6	8	x6	x8	8x 8x10			.....
4	x2½	x2½	6	x2½	x6	8	x4	x8	7x 7x10			.....
4	x2	x3	6	x5	x5	8	x3	x8	.....			.....

## Reducing Single Sweep Flanged Tees

4x4x2½	6x6x4	8x8x6
4x4x2	6x4x4	8x6x6

## Reducing Double Sweep Flanged Tees

4x4x2½	5x5x3	8x8x6
4x4x2	6x6x4	8x8x5
5x5x4	6x6x3	8x8x4

## Reducing Flanged Crosses

3x3x2½	6x6x4x4	8x8x6x6	8x8x4x4
4x4x2½	6x6x3x3	8x8x5x5	.....

## Reducing Flanged Laterals

4x4x2½	6x6x2½
These sizes make it possible to furnish almost every variety of fittings required, except special angles, offsets, etc.	

Reducing flanges are carried in stock. These flanges will always be the same thickness as the regular companion flanges of corresponding outside diameter.

The flanges are always drilled to the template corresponding to the outside diameter, unless otherwise ordered.

Customers who desire fittings reduced by the use of reducing companion flanges, will please specify "reduce by flanges if necessary."

## Prices of Sizes Not Shown

Sizes not covered in the list of sizes will be considered special, and made to order at the following advance in prices, according to the quantity of a size ordered at one time, viz.:

## Add to the Regular List Prices of Reducing Flanged Fittings the Percentage Advances Given Below

Size	One Piece	Two Pieces	Three Pieces	Four Pieces	Five Pieces	Six or More
3½-inch and Smaller	50%	40%	30%	20%	10%	No Advance
4 to 8-inch	25%	20%	15%	10%	5%	" "

Sizes 9-inch and larger will be made to order in quantities of one or more of a size, at the regular list and discount.

Single sweep tees are not made with side openings larger than the run.

Double sweep tees are not made reducing on the run. Should such tees, however, be wanted, they will be charged at a special price. On the double sweep tees, branch (outlet) can only be increased within a reasonable limit, which must be regulated by manufacturer's patterns.

Furnished faced only, unless otherwise ordered.



### Extra Prices for Galvanizing Standard Flanged Fittings and Flanges

Galvanized standard cast iron or Ferrosteeel flanged fittings will be made to order at an advance over the black price as below:

Size Inches	Flanged Elbows — Reducing Flanged Elbows — Flanged 45° Elbows — Flanged Taper Reducers Extra, Each	Flanged Tees and Reducing Tees — Flanged Base Elbows — Flanged Long Radius Elbows Extra, Each	Flanged Crosses and Flanged Reducing Crosses — Flanged Laterals and Reducing Laterals Extra, Each	REDUCING COMPANION FLANGES — FLANGES — Diameter Inches	Extra Each
1 1/4	\$2.40	\$3.60	\$4.80	\$ .60	....
1 1/2	2.40	3.60	4.80	.60	....
2	2.40	3.60	4.80	.70	6
2 1/2	2.50	3.75	5.00	.75	7
3	2.75	4.15	5.50	.85	7 1/2
3 1/2	3.25	4.90	6.50	1.00	8 1/2
4	3.65	5.50	7.25	1.20	9
4 1/2	4.35	6.50	8.75	1.25	9 1/4
5	4.85	7.25	9.75	1.35	10
6	6.00	9.00	12.00	1.65	11
7	8.00	12.00	16.00	2.15	12 1/2
8	9.00	13.50	18.00	2.50	13 1/2
9	13.00	19.50	26.00	3.00	15
10	14.50	22.00	29.00	3.75	16
12	21.00	31.00	42.00	5.00	19
14	30.00	45.00	60.00	7.00	21
15	35.00	52.50	70.00	9.00	22 1/4
16	40.00	60.00	80.00	10.50	23 1/2

### Extra Prices for Galvanizing Extra Heavy Flanged Fittings and Flanges

Galvanized extra heavy, cast iron or Ferrosteeel flanged fittings and companion flanges will be made to order at an advance over the black price as below:

Size Inches	Flanged Elbows — Reducing Flanged Elbows — Flanged 45° Elbows — Flanged Taper Reducers Extra, Each	Flanged Tees and Reducing Tees — Flanged Base Elbows — Flanged Long Radius Elbows Extra, Each	Flanged Crosses and Flanged Reducing Crosses — Flanged Laterals and Reducing Laterals Extra, Each	REDUCING COMPANION FLANGES OR BLIND FLANGES — Diameter Inches	Extra Each
1 1/4	\$3.00	\$4.50	\$6.00	\$ .85	....
1 1/2	3.00	4.50	6.00	.85	6
2	3.00	4.50	6.00	1.00	6 1/2
2 1/2	3.10	4.65	6.25	1.05	7 1/2
3	3.50	5.25	7.00	1.15	8 1/4
3 1/2	4.10	6.15	8.25	1.40	9
4	4.50	6.75	9.00	1.65	10
4 1/2	5.50	8.25	11.00	1.75	10 1/2
5	6.00	9.00	12.00	1.90	11
6	7.50	11.25	15.00	2.30	12 1/2
7	10.00	15.00	20.00	3.00	14
8	11.25	16.75	22.50	3.50	15
9	16.00	24.00	32.00	4.15	16 1/4
10	18.00	27.00	36.00	5.25	17 1/2
12	26.00	39.00	52.00	7.00	20 1/2
14	37.50	56.00	75.00	10.00	23
15	44.00	66.00	88.00	12.50	24 1/2
16	50.00	75.00	100.00	15.00	25 1/2

### Common Cast Iron Flanges

Not Faced



No. 339

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
3/4x4	\$ .22	3 1/2x 9	1.15	7x13 1/2	\$2.80
3/4x5	.30	3 1/2x10	1.50	7x14	3.25
1 x5	.30	4 x 8	.90	7x15	4.00
1 x6	.42	4 x 8 1/2	1.00	8x13	2.80
1 1/4x4 1/2	.25	4 x 9	1.15	8x13 1/2	2.80
1 1/4x5	.30	4 x10	1.50	8x14	3.25
1 1/4x6	.40	4 1/2x 9	1.15	8x15	4.00
1 1/2x5	.30	4 1/2x 9 1/4	1.25	8x16	5.00
1 1/2x6	.40	4 1/2x10	1.50	9x15	4.00
2 x6	.42	4 1/2x11	1.75	9x16	5.00
2 x6 1/2	.50	5 x10	1.50	9x17	5.75
2 x7	.62	5 x11	1.75	10x16	5.00
2 x8	.90	5 x12	2.20	10x17	5.75
2 1/2x6	.42	5 x12 1/2	2.20	10x18	7.00
2 1/2x6 1/2	.50	6 x10	1.50	10x19	7.50
2 1/2x7	.62	6 x11	1.75	12x18	7.00
2 1/2x8	.90	6 x12	2.20	12x19	7.50
3 x6 1/2	.50	6 x12 1/2	2.20	12x20	8.50
3 x7	.62	6 x13	2.80	14x20	8.50
3 x7 1/2	.75	6 x13 1/2	2.30	14x21	9.50
3 x8	.90	6 x14	3.25	15x21	9.50
3 x9	1.15	7 x12	2.20	15x22 1/4	14.00
3 1/2x8	.90	7 x12 1/2	2.20	16x23 1/2	18.00
3 1/2x8 1/2	1.00	7 x13	2.80	.....	.....

Sizes 14 inch and larger are to be used with O. D. pipe of same size.

### Forged Steel Boiler Flanges



Forged from soft open-hearth steel. May be punched for rivets, wide face making ample space for rivet heads.

Edges beveled for calking. Heavy, deep hub with perfect thread entire length. Tested with Briggs Standard Thread Gauge.

Size Pipe Inches	Each Bent or Flat not Threaded	Each Bent or Flat and Threaded	Diam. Flange Inches	Thick- ness Flange Inches	Depth Flange Inches	Approx. Weight Flange Pounds
3/4	\$1.60	\$1.70	6	5/16	1	3
1	1.60	1.80	6	5/16	1	3
1 1/4	1.75	1.95	6 1/2	5/16	1	3 1/2
1 1/2	2.05	2.25	7	5/16	1 1/4	4 1/2
2	2.35	2.50	8	3/8	1 1/4	6
2 1/2	2.45	2.60	8 1/2	3/8	1 1/2	8
3	2.65	2.80	9	3/8	1 1/2	9
3 1/2	3.00	3.20	9 1/2	7/16	1 1/2	10
4	3.35	3.50	10	7/16	1 1/2	10 1/2
4 1/2	4.00	4.20	10 1/2	1/2	1 1/2	13
5	4.75	5.00	11 1/2	1/2	2	15
6	5.70	6.00	12 1/2	1/2	2	19
7	8.60	9.00	14	5/8	2 1/4	28
8	11.40	12.00	15	5/8	2 1/4	30
9	17.00	20.00	16	3/4	2 1/2	36
10	21.00	25.00	17 1/2	3/4	2 1/2	44
12	26.00	30.00	20	13/16	3	60

Flanges 7-inch and smaller, bent to smaller than 18-inch, but not under 14-inch, 50 per cent extra. Bending flanges 8-inch and larger to circles under 24-inch, subject to special prices. Flanges threaded straight through, 15 per cent extra. Flanges larger O. D. than standard, special price. Other irregular flanges, special price.



## Machine Bolts

With Manufacturers' Standard Square Heads  
and Square Nuts

Effective April 1, 1927



Manufacturers' Standard List—Price, per 100

Length Inches	DIAMETER, INCHES				
	3/16 and 1/4	5/16	3/8	1/2	5/8 and 3/4
3/4	\$1.40	\$2.00	\$2.45	\$4.15	
1	1.45	2.10	2.60	4.35	\$5.20
1 1/4	1.55	2.20	2.75	4.55	8.35
1 1/2	1.60	2.30	2.95	4.75	8.60
2	1.80	2.60	3.25	5.20	9.10
2 1/2	2.00	2.85	3.60	5.70	9.60
3	2.15	3.05	3.90	6.10	10.10
3 1/2	2.35	3.30	4.25	6.55	10.60
4	3.05	3.55	4.60	7.00	11.10
4 1/2	3.20	4.25	4.90	7.40	11.60
5	3.35	4.50	5.55	7.85	12.10
5 1/2	3.50	4.70	5.85	8.30	12.60
6	3.65	4.90	6.20	8.75	13.10
6 1/2	3.80	5.10	6.50	9.20	13.60
7	4.00	5.35	6.85	9.65	14.10
7 1/2	4.15	5.55	7.15	10.10	14.60
8	4.35	5.80	7.50	10.55	15.10
8 1/2	4.50	6.00	7.80	11.00	15.60
9	4.70	6.25	8.15	11.45	16.10
9 1/2	4.85	6.45	8.45	11.95	16.60
10	5.05	6.70	8.80	12.35	17.10
11	5.40	7.15	9.50	13.20	18.10
12	5.75	7.60	10.20	14.05	19.10

Length Inches	DIAMETER, INCHES				
	3/4	7/8	1	1 1/8	1 1/4
1 1/2	\$10.95	\$16.70	\$23.25	\$42.00	\$49.50
2	11.60	17.60	24.40	43.40	51.15
2 1/2	12.25	18.50	25.55	44.60	52.80
3	12.90	19.40	26.70	45.90	54.45
3 1/2	13.55	20.30	27.85	47.20	56.10
4	14.20	21.20	29.00	48.50	57.75
4 1/2	14.85	22.10	30.15	49.80	59.40
5	15.50	23.00	31.30	51.10	61.05
5 1/2	16.15	23.90	32.45	52.40	62.70
6	16.80	24.80	33.60	53.70	64.35
6 1/2	17.45	25.70	34.75	55.00	66.00
7	18.10	26.60	35.90	56.30	67.65
7 1/2	18.75	27.50	37.05	57.60	69.30
8	19.40	28.40	38.20	58.90	70.95
8 1/2	20.05	29.30	39.35	60.20	72.60
9	20.70	30.20	40.50	61.50	74.25
9 1/2	21.35	31.10	41.65	62.80	75.90
10	22.00	32.00	42.80	64.10	77.55
11	23.30	33.80	45.10	66.70	80.85
12	24.60	35.60	47.40	69.30	84.15

Less than standard container quantities add 10% to list.

Special Heads and Styles—Gross Extras to Be Added

ADD, PER 100 EXTRA									
DIAMETER, INCHES									
3/16	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8

## Manufacturers' Standard Common Hexagon Nuts

\$10	\$20	\$30	\$45	\$50	\$90	\$1.30	\$2.00	\$2.90	\$3.80	\$4.80
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## Manufacturers' Standard Hexagon Heads

\$15	\$20	\$30	\$45	\$65	\$1.00	\$1.40	\$2.20	\$3.00	\$5.00	\$7.00
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## U. S. Standard Square Heads

\$33	\$45	\$65	\$95	\$1.40	\$2.10	\$2.60	\$3.60	\$5.20	\$7.70	\$10.75
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## U. S. Standard Hexagon Heads

\$30	\$40	\$60	\$90	\$1.30	\$2.00	\$2.50	\$3.50	\$5.00	\$7.50	\$10.50
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## For Bolts with Nuts Other Than Manufacturers'

Standard Common Square—Gross Extras to Be Added

\$10	\$20	\$30	\$45	\$50	\$95	\$1.65	\$3.25	\$4.50	\$5.25	\$6.50
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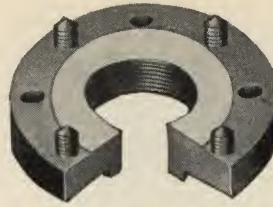
## U. S. Standard Hot Pressed Square Nuts

\$25	\$40	\$65	\$80	\$95	\$1.00	\$1.30	\$2.10	\$2.90	\$3.10	\$4.00
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## U. S. Standard Hot Pressed Hexagon Nuts

\$30	\$50	\$80	\$1.00	\$1.10	\$1.20	\$1.70	\$2.75	\$3.80	\$4.00	\$5.30
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## Ring Gaskets

Ring gaskets cover the faces  
of flanges inside of bolt holes.These gaskets will always be  
furnished unless otherwise  
ordered.For Standard and Low Pressure Flanged  
Valves and Fittings

Size Valve or Fitting Inches	I. D. and O. D. Inches	EACH		
		1/16-Inch Cloth Insertion	1/16-In. CC Red Sheet	27-Gauge Corrugated Copper
3/4	1 x 2 1/8	\$0.05	\$0.09	\$0.15
1	1 x 2 9/16	.05	.09	.16
1 1/4	1 1/4 x 2 5/8	.07	.13	.17
1 1/2	1 1/2 x 3 3/8	.07	.13	.18
2	2 x 4 1/8	.07	.17	.21
2 1/2	2 1/2 x 4 7/8	.09	.21	.27
3	3 x 5 3/8	.12	.25	.31
3 1/2	3 1/2 x 6 3/8	.14	.35	.47
4	4 x 6 7/8	.16	.39	.52
4 1/2	4 1/2 x 7	.16	.43	.52
5	5 x 7 3/4	.19	.50	.55
6	6 x 8 3/4	.23	.59	.65
7	7 x 10	.28	.68	.80
8	8 x 11	.30	.75	.90
9	9 x 12 1/2	.37	.85	1.20
10	10 x 13 3/8	.42	1.00	1.30
12	12 x 16 1/8	.58	1.25	1.90
14	14 x 17 3/4	.70	1.56	1.90
15	15 x 19	.75	1.77	2.15
16	16 x 20 1/4	.82	2.00	2.40
18	18 x 21 5/8	.86	2.30	2.40
20	20 x 23 7/8	1.02	2.50	2.75
22	22 x 26	1.10	2.60	3.05
24	24 x 28 1/4	1.40	2.90	3.50
26	26 x 30 1/2	1.62	3.15	....
28	28 x 32 3/4	1.85	4.15	....
30	30 x 34 5/8	2.10	4.40	....
32	32 x 37	2.30	5.75	....
34	34 x 39	2.65	6.25	....
36	36 x 41 1/4	2.90	6.80	....
38	38 x 43 5/8	3.10	7.30	....
40	40 x 45 3/8	3.35	7.80	....
42	42 x 47 7/8	3.50	8.05	....
44	44 x 50 1/8	....	8.35	....
46	46 x 52 1/8	....	8.85	....
48	48 x 54 3/8	....	9.40	....
50	50 x 56 1/2	....	0.45	....

For Medium and Extra Heavy Flanged Valves  
and Fittings

Size Valve or Fitting Inches	I. D. and O. D. Inches	EACH		
		1/16-In. CC Red Sheet	27-Gauge Corrugated Copper	1/16-In. Granite Asbestos Sheet
1	1 x 2 3/4	\$0.17	\$0.17	\$0.14
1 1/4	1 1/4 x 3 1/8	.17	.18	.17
1 1/2	1 1/2 x 3 3/4	.17	.21	.21
2	2 x 4 1/4	.19	.24	.26
2 1/2	2 1/2 x 5	.25	.31	.33
3	3 x 5 3/4	.32	.43	.41
3 1/2	3 1/2 x 6 3/8	.35	.47	.46
4	4 x 7	.38	.58	.57
4 1/2	4 1/2 x 7 5/8	.44	.62	.61
5	5 x 8 3/8	.52	.75	.77
6	6 x 9 3/4	.63	1.00	.95
7	7 x 10 7/8	.85	1.15	1.20
8	8 x 12	.90	1.35	1.25
9	9 x 12 7/8	1.00	1.40	1.45
10	10 x 14 1/8	1.15	1.65	1.75
12	12 x 16 1/2	1.50	2.15	2.15
14	14 x 19	2.10	2.75	2.85
15	15 x 20 3/8	2.20	2.90	3.10
16	16 x 21 1/8	2.50	3.25	3.65
18	18 x 23 3/8	2.85	3.60	4.15
20	20 x 25 1/2	3.05	3.95	4.75
22	22 x 27 3/8	3.25	4.50	5.20
24	24 x 30 1/4	4.00	....	6.00



## Sigma Steel Flanged Fittings and Valves

We can furnish Walworth Cast Steel Flanged Fittings, Flanges and Valves for Working Pressures listed below.

## Series 150

Valves, Fittings and Flanges  
Working Pressure

150 Pounds at 500°F for Steam, Hot Oil and Vapor  
200 Pounds at 450°F for Boiler Feed  
125 Pounds at 750°F for Hot Oil and Vapor  
300 Pounds Non-Shock W.P. for Cold Air, Oil, Water and Gas  
450 Pounds Hydrostatic Pressure Test

## Series 300

Valves, Fittings and Flanges  
Working Pressure

300 Pounds at 750°F for Steam, Hot Oil and Vapor  
400 Pounds at 450°F for Boiler Feed  
275 Pounds at 900°F for Hot Oil and Vapor  
225 Pounds at 1000°F for Hot Oil and Vapor  
500 Pounds Non-Shock W.P. for Cold Air, Oil, Water and Gas  
750 Pounds Hydrostatic Pressure Test

## Series 400

Valves, Fittings and Flanges  
Working Pressure

400 Pounds at 750°F for Steam, Hot Oil and Vapor  
500 Pounds at 450°F for Boiler Feed  
375 Pounds at 900°F for Hot Oil and Vapor  
325 Pounds at 1000°F for Hot Oil and Vapor  
750 Pounds Non-Shock W.P. for Cold Air, Oil, Water and Gas  
1000 Pounds Hydrostatic Pressure Test

## Series 600

Valves, Fittings and Flanges  
Working Pressure

600 Pounds at 750°F for Steam, Hot Oil and Vapor  
720 Pounds at 450°F for Boiler Feed  
550 Pounds at 900°F for Hot Oil and Vapor  
475 Pounds at 1000°F for Hot Oil and Vapor  
1000 Pounds Non-Shock W.P. for Cold Air, Oil, Water and Gas  
1500 Pounds Hydrostatic Pressure Test

## Series 900

Valves, Fittings and Flanges  
Working Pressure

900 Pounds at 750°F for Steam, Hot Oil and Vapor  
1080 Pounds at 450°F for Boiler Feed  
825 Pounds at 900°F for Hot Oil and Vapor  
725 Pounds at 1000°F for Hot Oil and Vapor  
1500 Pounds Non-Shock W.P. for Cold Air, Oil, Water and Gas  
2000 Pounds Hydrostatic Pressure Test

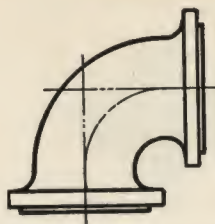
## Series 1350

Valves, Fittings and Flanges  
Working Pressure

1350 Pounds at 750°F for Steam, Hot Oil and Vapor  
1625 Pounds at 450°F for Boiler Feed  
1250 Pounds at 900°F for Hot Oil and Vapor  
1100 Pounds at 1000°F for Hot Oil and Vapor  
2250 Pounds Non-Shock W.P. for Cold Air, Oil, Water and Gas  
3000 Pounds Hydrostatic Pressure Test

For further information on Steel Fittings and Valves send for special Sigma Steel Catalogue.

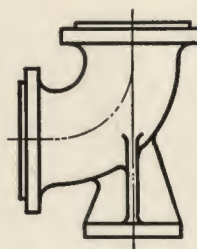
## Sigma Steel Flanged Fittings



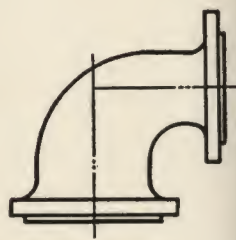
90° Elbow



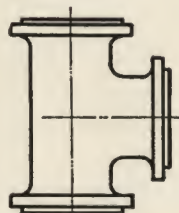
45° Elbow



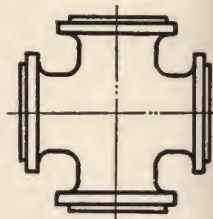
Base Elbow



Reducing Elbow



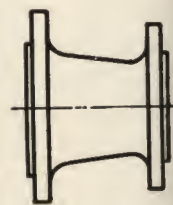
Tee



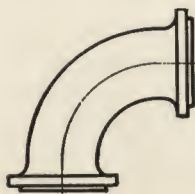
Cross



Lateral



Taper Reducer



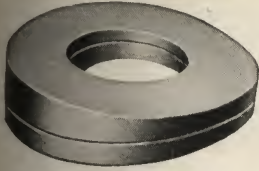
Long Radius Elbow



Return Bend



## Adjustable Annular Wedges



Fit within the bolt circle of the flanges and give any angle up to approximately 10 degrees.

Have tongue on one part and a groove in the other part of the wedge. A copper gasket is placed between

these two parts which makes an absolutely tight joint.

## Standard Wedges

Size Inches	Throw per 100 Feet Inches	THICKNESS OF 1/2 WEDGE, INCHES		Weight per Pair Pounds	Price per Pair
		Maximum	Minimum		
2	232 1/4	5/8	1/4	2	\$3.00
2 1/2	194 3/4	5/8	1/4	3	3.25
3	175 1/2	5/8	1/4	4	3.60
4	184 1/2	3/4	1/4	5	4.50
5	160	3/4	1/4	6	6.00
6	141	3/4	1/4	7	7.00
7	123	3/4	1/4	9	8.00
8	139 1/2	7/8	1/4	12	9.25
9	122 1/2	7/8	1/4	16	10.25
10	137	1	1/4	19	11.50
12	132 1/4	1 1/8	1/4	30	13.50
14	120	1 1/8	1/4	28	16.50
15	128	1 1/4	1/4	39	19.00
16	120	1 1/4	1/4	50	22.00
18	112 1/2	1 1/4	1/4	49	28.00
20	114 1/4	1 3/8	1/4	52	35.00

## Extra Heavy Wedges

Size In.	Throw per 100 Ft. 1/2 WEDGE, IN.		Price per Pair	Size In.	Throw per 100 Ft. 1/2 WEDGE, IN.		Price per Pair
	Max.	Min.			Max.	Min.	
2	254 1/2	1 1/8	\$4.50	6	140 1/4	3/8	\$10.20
2 1/2	215 1/2	1 1/8	4.80	7	125 1/2	3/8	12.00
3	182 1/2	1 1/8	5.40	8	139	15/16	13.60
4	196 1/2	1 3/8	6.70	10	137	1 1/8	17.00
5	163 3/4	1 3/8	9.00	12	135 1/2	1 3/8	20.00

## Adsclo Slotted Angle Flanges



This fitting is of special interest to engineers and piping contractors.

Made for standard pressure.

Any angle up to about 10° is easily and quickly made.

The 2 halves of the flange are fitted to both pipe ends and set together at the angle to give the desired throw, and then made up in the usual manner. Set at extreme angle, this fitting will give a throw of 8 feet in a 50-foot pipe line. The bolt openings are slotted, which principle of construction permits bolting of the flanges securely to the exact degree or amount of throw required in the pipe line.

The dimension from the face to the hub on the thin side is the same as that of standard companion flanges.

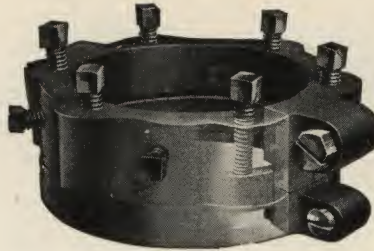
The diameter of flange is a trifle larger than standard for strength.

Price is complete with bolts and gaskets.

Extra heavy slotted angle flanges made to order. Prices upon application.

Size Inches	Weight Pounds	Price Each	Size Inches	Weight Pounds	Price Each
3	20	\$4.50	8	67	\$13.00
4	31	6.00	9	105	16.50
5	43	7.30	10	144	18.50
6	45	8.00	12	186	25.00
7	58	11.50	..	...	.....

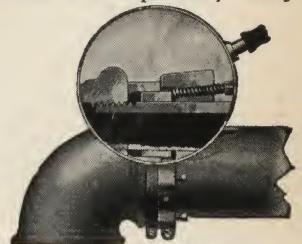
## Skinner Pipe Joint Clamps



Repairs leaks where pipe is screwed into fitting. The entire thrust is against the packing and the lip on the gasket container ring guides the packing squarely into the threads.

Made of malleable iron, elastic enough to withstand the highest pressures. A positive permanent repair on steam, oil, gas, hot or cold water, air, ammonia or brine.

Painted to resist rust and packed in stout carton. Made in halves held together by cap screws.

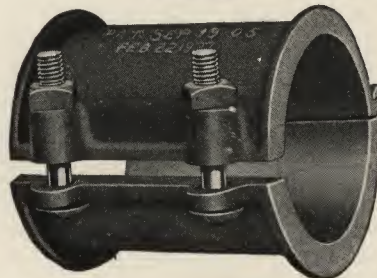


Detailed View

Size Pipe Inches	Price Each	Size Pipe Inches	Price Each	Size Pipe Inches	Price Each
1/2	\$1.50	3	\$4.50	8	\$13.00
3/4	1.50	3 1/2	5.25	9	15.75
1	1.50	4	6.00	10	18.75
1 1/4	1.90	4 1/2	6.75	12	22.50
1 1/2	2.25	5	7.50	14	31.50
2	3.00	6	9.00	15	33.75
2 1/2	3.75	7	10.50	16	36.00

Clamps 1/2 to 12-inch are for pipe measured inside diameter; 14-inch and larger, outside diameter.

## Emergency Pipe Clamps



For stopping leaks in pipe lines. It is a malleable iron cylinder, halved, hinged along one side and fitted with bolts on the other. A gasket completes the clamp. It is by concentration of pressure on the leak that this clamp makes a positive permanent repair.

Owing to the long open hinge, the two halves of the clamp may be slid together along the pipe so as to assemble the clamp when crowded for room.

Packed 12 to a carton, 1/2 to 2-inch sizes, and 6 to a carton, 2 1/2 to 4-inch sizes. For the larger sizes of pipe, clamps are reinforced with heavy ribs, which insure security under high pressure. Specify when O.D. or cast iron pipe sizes.

Size Pipe In.	Lgth. Overall In.	Wt., Lbs. per Doz.	Price Each	Size Pipe In.	Lgth. Overall In.	Wt., Lbs. per Doz.	Price Each
1½	3¼	10	<b>\$ .60</b>	1½	4	23	<b>\$1.05</b>
¾	3¼	13	<b>.68</b>	2	4¼	32	<b>1.20</b>
1	3½	15	<b>.75</b>	2½	4½	39	<b>1.50</b>
1¼	3¾	20	<b>.90</b>	3	5	51	<b>1.88</b>

Size Pipe In.	Lgth. Overall In.	No. Bolts	Wt. Lbs.	Price Each	Size Pipe In.	Lgth. Overall In.	No. Bolts	Wt. Lbs.	Price Each
3½	5½	2	6	<b>\$2.25</b>	8	9½	3	30	<b>\$12.00</b>
4	6	2	7½	<b>3.00</b>	*8	9½	3	32	<b>12.00</b>
*4	6½	2	8½	<b>6.75</b>	9	10	3	34	<b>13.50</b>
4½	6½	2	8½	<b>6.75</b>	10	12	4	45	<b>15.00</b>
5	7	3	10	<b>7.50</b>	*10	12	4	48	<b>15.00</b>
6	8	3	14	<b>9.00</b>	12	12	4	57	<b>18.00</b>
*6	8	3	15	<b>9.00</b>	*12	12	4	59	<b>18.00</b>
7	9	3	18	<b>10.50</b>	...	....	.	..	<b>.....</b>

\*Cast iron.



## Water Pipe Clamps

Malleable Iron, with Wrought Iron Strap



No. 722



No. 723

No.	CLAMPS WILL FIT, INCHES				Tapped for Wrought Iron Pipe Connections, Inches	Price Each
	O.D. of Circle	Size Wrought Iron Pipe	Size O. D. of Casing	Size Cast Iron Pipe		
0	1 7/8	1 1/2	2	..	1/2 and 3/4	\$1.00
1	2 3/8	2	2 1/2	..	1/2 to 1	1.00
2	2 7/8	2 1/2	2 3/4 & 3	2	1/2 to 1 1/4	1.25
3	3 1/2	3	3 1/2	..	1/2 to 1	1.25
4	3 1/2	3	3 1/2	..	1 1/4 to 2	1.50
5	4	3 1/2	4	3	1/2 to 1	1.50
6	4	3 1/2	4	3	1 1/4 to 2	1.75
7	4 1/2	4	4 1/2	..	1/2 to 1 1/2	1.75
8	4 1/2	4	4 1/2	..	2	2.00
9	4 1/2	4	4 1/2	..	2 1/2 and 3	4.00
10	5	4 1/2	5	4	3/4 to 1 1/2	1.80
11	5	4 1/2	5	4	2	2.15
12	5	4 1/2	5	4	2 1/2 and 3	4.00
13	5 1/2	5	5 1/2	..	3/4 to 1 1/2	1.80
14	5 1/2	5	5 1/2	..	2	2.15
15	5 1/2	5	5 1/2	..	2 1/2 and 3	4.00
16	6	..	6	5	1/2 to 1 1/2	2.00
17	6	..	6	5	2	2.40
18	6	..	6	5	2 1/2 and 3	4.50
19	6 5/8	6	6 5/8	..	3/4 to 1 1/2	2.25
20	6 5/8	6	6 5/8	..	2	2.50
21	6 5/8	6	6 5/8	..	2 1/2 and 3	5.00
22	7	..	7	6	3/4 to 1 1/2	2.50
23	7	..	7	6	2	2.70
24	7	..	7	6	2 1/2 and 3	5.00
25	7 5/8	7	7 5/8	..	3/4 to 1 1/2	2.50
26	7 5/8	7	7 5/8	..	2	2.70
27	7 5/8	7	7 5/8	..	2 1/2 and 3	5.00
28	8	..	8	7	3/4 to 1 1/2	4.50
29	8	..	8	7	2	5.00
30	8	..	8	7	2 1/2 and 3	5.50
30 1/2	8 5/8	8	8 5/8	..	3/4 to 1 1/2	5.50
31	8 5/8	8	8 5/8	..	2 to 3	5.50
32	8 5/8	8	8 5/8	..	4	6.00
33	9 5/8	9	..	..	1 1/2 to 3	8.00
34	10	..	10	9	3/4 to 2	9.00
35	10 3/4	10	..	..	3/4 to 2	9.00
36	12 3/4	12	..	..	3/4 to 2	10.00

Always order water pipe clamps by number.

## Steam Pipe Saddles

Malleable Iron, with Wrought Iron Straps for Wrought Pipe



No. 724

Size Pipe Inches	Tapped for Pipe Inches	Price Each	Size Pipe Inches	Tapped for Pipe Inches	Price Each
1 1/2	1/2 and 3/4	\$ .90	6	2 1/2 to 4	\$5.75
2	1/2 to 1 1/2	1.00	7	1 to 4	6.50
2 1/2	3/4 to 1 1/2	1.25	8	1 to 4	6.50
3	3/4 to 2	1.25	9	1 1/2 to 4	8.50
3 1/2	3/4 to 2	1.40	10	1 1/2 to 4	10.00
4	3/4 to 2	1.50	10	4 1/2 to 6	10.00
4 1/2	3/4 to 2	2.50	12	1 1/2 to 4	14.00
5	3/4 to 2	2.75	12	4 1/2 to 6	14.00
5	2 1/2 and 3	2.75	15	3 to 6	22.00
6	3/4 to 2	2.75	16	3 to 6	25.00

## Cast Iron Branch Tees



No. 1



No. 2



No. 3

## 1-Inch Branches—Center to Center, 2 1/2 Inches

No. of Branches	PRICE, EACH—SIZE OF RUN, INCHES					
	1	1 1/4	1 1/2	2	2 1/2	3
2	\$ .90	\$ .90	\$1.00	\$1.15	\$1.75	..
3	1.05	1.05	1.15	1.35	2.05	..
4	1.15	1.15	1.30	1.60	2.40	\$3.95
5	1.35	1.35	1.45	1.85	2.75	4.40
6	1.60	1.60	1.75	2.10	3.10	4.85
7	1.90	1.90	2.20	2.45	3.50	5.50
8	2.20	2.20	2.45	2.75	3.75	6.20
9	2.65	2.65	2.90	3.40	4.30	7.85
10	3.15	3.15	3.30	4.00	5.00	8.40
11	3.75	3.75	4.50	4.80	5.50	9.05
12	4.40	4.40	4.75	5.10	5.85	9.70
13	5.00	5.00	5.50	6.00	6.30	10.35
14	5.50	5.50	7.00	7.25	..	11.00
15	..	..	7.50	7.75	..	11.75
16	..	..	8.00	8.25	..	12.50

## 1 1/4-Inch Branches—Center to Center, 3 Inches

No. of Branches	1	1 1/4	1 1/2	2	2 1/2	3
2	..	\$1.30	\$1.30	\$1.50	\$1.95	..
3	..	1.65	1.65	1.90	2.40	..
4	..	2.00	2.00	2.40	2.85	\$4.30
5	..	2.40	2.40	2.90	3.55	4.90
6	..	2.80	2.80	3.30	3.95	5.40
7	..	3.20	3.20	3.90	4.20	6.25
8	..	3.60	3.60	4.50	4.95	7.10
9	..	4.30	4.30	5.25	6.15	8.25
10	..	4.80	4.80	5.85	6.85	9.20
11	..	5.00	5.00	6.25	7.25	10.00
12	..	5.25	5.25	6.50	7.65	10.85
13	..	6.00	6.00	7.00	8.25	11.65
14	..	6.75	6.75	7.75	9.00	..
15	..	7.50	7.50	8.50	9.75	..
16	..	8.50	8.50	9.50	10.75	..

## 1 1/2-Inch Branches—Center to Center, 3 1/2 Inches

No. of Branches	1	1 1/4	1 1/2	2	2 1/2	3
2	..	..	\$2.10	\$2.10	\$2.85	\$3.15
3	..	..	2.70	2.70	3.45	3.80
4	..	..	3.35	3.35	4.15	4.60
5	..	..	4.00	4.00	5.00	5.50
6	..	..	4.65	4.65	5.75	6.25
7	..	..	5.25	5.25	6.50	7.25
8	..	..	5.85	5.85	7.00	7.75
9	..	..	6.50	6.50	8.25	9.00
10	..	..	7.60	7.60	9.25	10.00
11	..	..	8.00	8.00	9.75	10.75
12	..	..	8.50	8.50	10.50	11.50
13	..	..	9.50	9.50	11.50	12.75

## 2-Inch Branches—Center to Center, 4 1/2 Inches

No. of Branches	1	1 1/4	1 1/2	2	2 1/2	3
2	..	..	..	\$4.10	\$4.50	\$5.00
3	..	..	..	5.25	5.75	6.25
4	..	..	..	6.40	7.00	7.75
5	..	..	..	7.65	8.50	9.25
6	..	..	..	8.80	9.75	10.75
7	..	..	..	10.60	11.75	13.00
8	..	..	..	11.50	12.75	14.00
9	..	..	..	12.25	13.50	15.00
10	..	..	..	13.50	15.00	16.50
11	..	..	..	14.25	15.75	17.50
12	..	..	..	15.00	16.50	18.50
13	..	..	..	16.00	17.50	19.50

Back or side outlets charged as additional front outlets. In ordering state size of run required. Branch tees for circulation are tapped right hand—all openings. Branch tees for box coils are tapped left hand in branches and right hand in back or side outlet.



## Cast Iron Hook Plates



No. 737, Single Hook

No. of Hooks	PRICE, EACH FOR PIPE, INCHES			
	1	1 1/4	1 1/2	2
	CENTER TO CENTER, INCHES			
	2 1/2	3	3 1/2	4 1/2
1	\$.09	\$.10	\$.15	\$.22
2	.18	.21	.28	.43
3	.23	.27	.43	.65
4	.26	.32	.58	.90
5	.32	.41	.72	1.15
6	.38	.52	.88	1.35

No. 736  
6-Hook

## No. 735 Expansion Hook Plates

When hook plates are ordered, specifying a greater number of hooks than listed below, we will send two; for instance an order calling for two 2x8 hook plates will be filled with four 2x4.

No. of Hooks	PRICE, EACH FOR PIPE, INCHES			
	1	1 1/4	1 1/2	2
	BETWEEN CENTERS, INCHES			
	2 1/2	3	3 1/2	4 1/2
1	\$.15	\$.17	\$.25	...
2	.25	.27	.40	\$.60
3	.35	.40	.60	.85
4	.50	.60	.75	1.00
5	.60	.70	.90	1.35
6	.70	.80	1.00	1.55

## No. 51 Grabler Sectional Steel Hook Plates

This sectional steel hook plate is stronger, neater and easier to work than cast iron.

It will not break and is practically indestructible.

Furnished in long strips; as many hooks as desired can easily be cut off at the ribs shown.

For Pipe Inches	No. of Hooks per Strip	Price per Strip
1	30	\$2.50
1 1/4	30	3.25
1 1/2	25	3.75
2	20	4.25



## No. 738 Beam Hooks—Long Shanks

Size Inches	Price Each	Size Inches	Price Each
1 1/2	\$.13	1 1/2	\$.24
3/4	.15	2	.35
1	.18	2 1/2	.65
1 1/4	.22	3	.90



## No. 22 Steel Drop Forged I-Beam Clamps

Adjustable to fit I-beams  
1 to 6 1/2 inches.

No.	For Pipe Inches	Price Each
1	1/2 to 1 1/2	\$.25
2	2 " 3	.30
3	3 1/2 " 6	.35
4	7 " 8	.50
5	9 " 12	.70



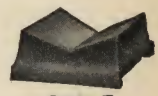
## Pipe Supports



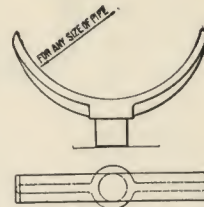
Style C



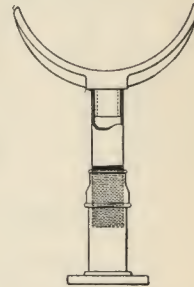
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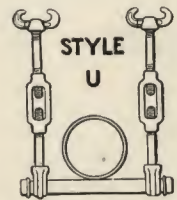
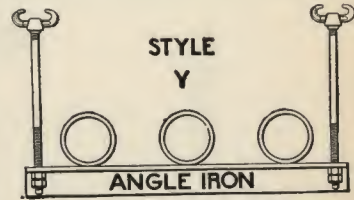
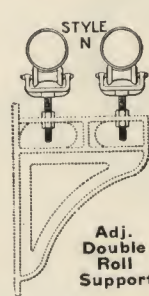
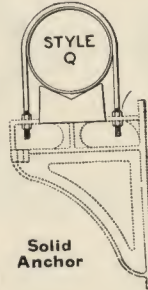
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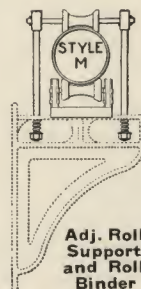
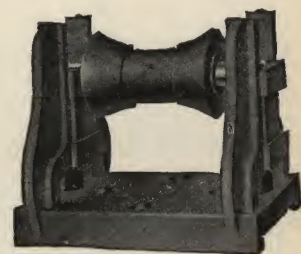
Style G



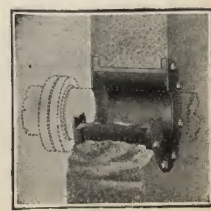
Style H

STYLE  
UAdjustable Hanger  
For One or More PipesSTYLE  
YAdjustable Angle Iron Hanger  
For One or More PipesSTYLE  
NAdj.  
Double  
Roll  
SupportSTYLE  
QSolid  
AnchorSTYLE  
Z Z  
END VIEW

Adj. Pipe Support

STYLE  
MAdj. Roll  
Support  
and Roll  
BinderStyle W Adj. Roll and  
Stand, Sizes 4 to 24 In.

No. 6 Wall Arch



No. 10 Wall Sleeve



### No. 732 Expansion Pipe Hangers With Solid Ring and Ceiling Plate

Prices do not include pipe from ceiling plate to ring.

Size In.	Tapped for I.P., In.	Complete	Price, Each Rings	Plates	Buttons
1/2	1/4	\$ .17	\$ .08	\$ .08	\$ .06
3/4	3/8	.17	.08	.08	.06
1	3/8	.18	.12	.08	.06
1 1/4	3/8	.19	.15	.08	.06
1 1/2	3/8	.25	.20	.09	.07
2	3/8	.29	.25	.09	.07
2 1/2	1/2	.36	.30	.10	.08
3	1/2	.44	.40	.10	.08
3 1/2	1/2	.55	.50	.10	.08
4	1/2	.63	.60	.10	.08
4 1/2	1/2	.90	.80	.10	.08
5	3/4	1.12	1.00	.10	.08
6	3/4	1.35	1.25	.10	.08
7	3/4	1.80	1.70	.10	.08
8	3/4	2.25	2.15	.10	.08



### Expansion Pipe Hangers

With Sectional Ring

For 8-Inch and Smaller Pipe



Style R  
With Lag Screw



Style S  
With Ceiling Plate

Prices do not include pipe from lag screw or ceiling plate.

Size Inches	Tapped for I.P. Inches	Price Each	Size Inches	Tapped for I.P. Inches	Price Each
3/4	1/8	\$ .32	3 1/2	3/8	\$1.00
1	1/8	.33	4	3/8	1.15
1 1/4	1/8	.35	4 1/2	3/8	1.60
1 1/2	1/4	.45	5	3/4	2.00
2	1/4	.55	6	3/4	2.50
2 1/2	1/4	.65	7	3/4	3.00
3	3/8	.80	8	3/4	3.75

### Style SS Expansion Pipe Hangers

With Sectional Ring  
For 8-inch and Smaller Pipe

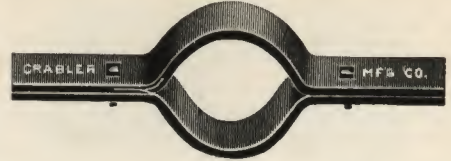
Prices do not include pipe from beam clamp to ring.



With Beam  
Clamp

Size In.	Tapped for I.P. In.	Price Each	Beam Clamps Price Each	Size In.	Tapped for I.P. In.	Price Each	Beam Clamps Price Each
3/4	1/8	\$1.00	\$ .75	3 1/2	3/8	\$1.70	\$ .75
1	1/8	1.00	.75	4	3/8	1.85	.75
1 1/4	1/8	1.05	.75	4 1/2	3/8	3.35	.75
1 1/2	1/4	1.15	.75	5	3/4	3.75	1.75
2	1/4	1.25	.75	6	3/4	4.25	1.75
2 1/2	1/4	1.35	.75	7	3/4	4.75	1.75
3	3/8	1.50	.75	8	3/4	5.50	1.75

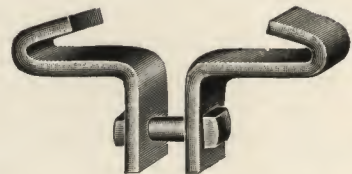
### Heavy Extension Pipe Clamps and Bolts No. 31



For Pipe Inches	Size Stock Inches	Price Each	For Pipe Inches	Size Stock Inches	Price Each
3	1/4x1 1/4	\$ .70	8	3/8x1 1/2	\$1.45
3 1/2	1/4x1 1/4	.75	9	3/8x1 1/2	1.60
4	1/4x1 1/4	.80	10	1/2x2	1.90
4 1/2	1/4x1 1/4	.85	12	1/2x2	2.20
5	1/4x1 1/4	.90	14	1/2x2	2.50
6	3/8x1 1/2	1.15	16	1/2x2	2.80
7	3/8x1 1/2	1.30	..	..	..

### I Beam Clamps

With Bolt



No. 23

1 1/4x1/4-Inch Steel with 3/8-Inch Bolt

I Beam.....inches	2	3	4	5	6	7	8
Weight..... per 100 clamps	55	86	91	104	112	121	...
Price..... each	\$ .28	.35	.38	.42	.46	.50	.55

1 1/2x1/4-Inch Steel with 1/2-Inch Bolt

I Beam.....inches	3	4	5	6	7	8
Weight..... per 100 clamps	117	122	125	128	140	...
Price..... each	\$ .50	.55	.60	.65	.70	.75

1 1/2x3/8-Inch Steel with 1/2-Inch Bolt

I Beam.....inches	3	4	5	6	7	8
Weight..... per 100 clamps	152	169	186	200	235	...
Price..... each	\$ .70	.77	.84	.91	.98	1.05

### No. 310 Solid Ring Pipe Hangers



Size In.	PRICE, PER 100 Blk.	Galv.	Size In.	PRICE, PER 100 Blk.	Galv.
3/8	\$5.00	\$6.50	1 1/4	\$10.00	\$12.00
1/2	5.00	6.50	1 1/2	14.00	16.00
3/4	5.80	7.00	2	22.00	25.00
1	7.75	9.00	...	...	...

### No. 733 Adjustable Steel Pipe Hangers



Size In.	Each	Size In.	Each	Size In.	Each
1/2	\$ .08	2	\$ .14	4 1/2	\$ .30
3/4	.08	2 1/2	.16	5	...
1	.09	3	.18	6	...
1 1/4	.10	3 1/2	.20	...	...
1 1/2	.12	4	.25	...	...

### No. 734 Extension Bars

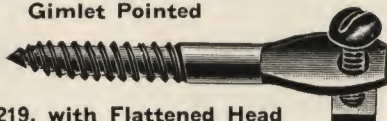


No.	Width In.	Per Foot	No.	Width In.	Per Foot
10	3/4	\$ .08	14	1 1/8	\$ .12
11	7/8	.09	15	1 1/4	...
13	1	.11	...	...	...



## Galvanized Pipe Straps

Size In.	Wt. Lbs. per 100	Price per Lb.	Size In.	Wt. Lbs. per 100	Price per Lb.
1/4	2	\$.30	1	7	\$.30
3/8	3	.30	1 1/4	8 1/2	.30
1/2	3 1/4	.30	1 1/2	9	.30
3/4	5	.30	2	11 1/4	.30

Grabler Pipe Hanger Lag Screws  
Gimlet Pointed

## No. 219, with Flattened Head

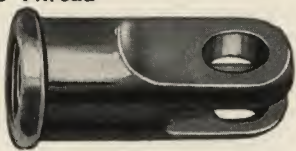
No.	Dimensions Inches	For Pipe Inches	Size Bolt Inches	Price per 100 with Bolt
1	5/16x3	1/2 to 1 1/2	1/4	\$10.00
2	3/8x4	2 to 3	1/4	11.30
3	1/2x5	3 1/2 to 6	5/16	14.00
4	5/8x5 1/2	7 to 8	3/8	20.00
5	3/4x6	8 to 12	1/2	25.00

## No. 20, with Threaded End

No.	Dimen. Inches	Size Pipe Thread, In.	Price per 100	No.	Dimen. Inches	Size Pipe Thread, In.	Price per 100
1	3/8x3 1/2	1/8	\$10.00	3	5/8x5	3/8	\$14.00
2	1/2x4	1/4	12.00	4	5/8x5	1/2	20.00

No. 223 Grabler Malleable Iron  
Clevis Sockets  
With Pipe Thread

Size No.	For Pipe Inches	Price Each
1	1/8	\$.10
2	1/4	.12
3	3/8	.14
4	1/2	.18
5	3/4	.25

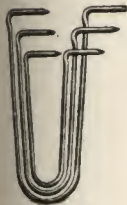


## No. 90 Grabler Malleable Iron Sockets

Size No.	Size In.	With Pipe Thread Price Each	Size In.	With Bolt Thread Price Each
1	1/8	\$.08	...	...
2	1/4	.10	3/8	\$.08
3	3/8	.12	7/16	.09
4	1/2	.15	1/2	.10
5	3/4	.20	5/8	.12



## Reznor Steel Wire Pipe Hooks



In ordering, always specify the length of hook desired, otherwise the shortest, or standard length, will be shipped.

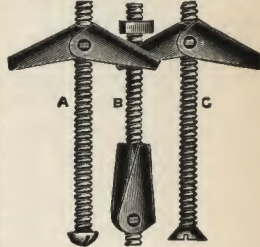
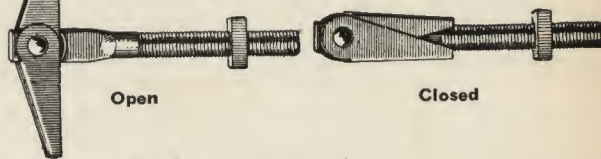
Pipe Size Inches	3	4	6	8	10
3/8	\$1.00	\$1.15	\$1.40	....	....
1/2	1.10	1.20	1.50	\$1.90	....
3/4	....	1.30	1.70	2.20	....
1	....	1.50	2.00	2.40	\$2.80
1 1/4	....	1.90	2.50	3.00	3.50
1 1/2	....	....	2.70	3.50	4.00
2	....	....	2.90	4.00	4.50

## Paine Spring Wing Trunion Toggle Bolts

Will work instantly in any position in any hollow material. Will work in gypsum or machalite. Made in 5 sizes of bolts and 3 styles of heads, round, flat and threaded wire. When ordering, specify style of head.

Toggle bolts 1/8 and 5/32-inch in diameter are packed 100 to the box; 3/16, 1/4 and 5/16-inch diameter, packed 50 to the box.

Bolt Inches	Per 100	Bolt Inches	Per 100
6-32x2	\$6.50	1/4x4	\$8.15
6-32x3	6.75	1/4x5	8.55
6-32x4	7.00	1/4x6	8.95
1/8 x3	6.75	3/16x3	9.85
1/8 x3 1/2	6.90	3/16x4	10.15
1/8 x4	7.00	3/16x5	10.55
3/16x2	6.60	3/16x6	10.95
3/16x3	6.85	3/8x3	11.50
3/16x3 1/2	7.00	3/8x4	13.50
3/16x4	7.15	3/8x5	15.25
3/16x5	7.50	3/8x6	16.50
3/16x6	7.80	1/2x4	20.00
1/4 x3	7.85	1/2x6	23.00
1/4 x3 1/4	8.00	....	....

Paine Spring Type Riveted-on  
Head Toggle Bolts

Made in sizes 5/8 and 3/8-inch only.

The riveted-on head toggle is intended for heavy duty in such materials as tile, steel ceilings, metal lath, etc.

Lgth. In.	Hole In.	Spread of Wings In.	5/16-INCH DIAM. BOLT— Wt., Lbs. per 100	Price per 100	3/8-INCH DIAM. BOLT— Wt., Lbs. per 100	Price per 100
3	5/8	2 1/4	10	\$9.85	12 1/2	\$11.50
4	5/8	2 1/4	11 1/2	10.15	15	13.50
5	5/8	2 1/4	13 1/2	10.55	17 1/2	15.25
6	5/8	2 1/4	15 1/2	10.95	20	16.50

## Stop-Plugs

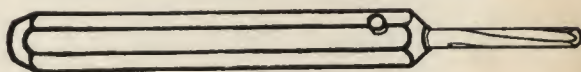


An improved method of securing screws and hooks in walls of all kinds. This stop-plug, patented in all countries, is manufactured in tubular and elastic form of impregnated fibrous material according to a special method.

Packed 100 in a box.

Size No.	Diam. In.	For Use with Screw No.	PRICE, PER 100 LENGTH OF STOP-PLUG, INCHES				
			3/4	1	1 1/2	2	2 1/2
6	5/32 In.	5-7	....	\$1.55	....	....	....
8	No. 13	8-10	\$1.70	1.90	\$2.30	....	....
10	" 12	10-12	....	2.15	2.65	\$3.10	....
12	1/4 In.	12-14	....	2.55	3.05	3.55	....
14	9/32 "	15-16	....	3.00	3.60	4.20	....
16	5/16 "	16-18	....	....	4.20	5.00	\$5.80
18	11/32 "	18-20	....	....	5.00	6.00	7.00
20	3/8 "	20-24	....	....	6.00	7.00	8.00

## Universal Stop Drills and Holders



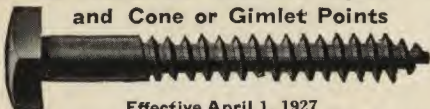
Price, Universal Stop Drill Holders Fitting All Sizes of Drills.....each \$1.00

## Stop Drills without Holders

No.	6	8	10	12	14	16	18	20
Price.....each	\$ .30	.30	.35	.35	.35	.40	.60	.65



## Coach and Lag Bolts

With Manufacturers' Standard Square Heads  
and Cone or Gimlet PointsEffective April 1, 1927  
Manufacturers' Standard List—Price, per 100

Length Inches	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
1	\$2.35	\$2.85	\$4.25	\$5.25					
1 1/2	2.15	2.60	3.90	4.85	\$7.95	\$12.50			
2	2.35	2.85	3.55	4.45	7.40	11.75	\$18.60	\$28.40	
2 1/2	2.55	3.10	3.90	4.85	6.85	11.00	17.60	27.10	
3	2.80	3.40	4.30	5.30	7.50	11.90	16.80	26.05	
3 1/2	3.05	3.70	4.70	5.75	8.15	12.80	18.00	25.00	
4	3.30	4.00	5.10	6.20	8.80	13.70	19.20	26.55	
4 1/2	3.55	4.30	5.50	6.65	9.45	14.60	20.40	28.10	
5	3.80	4.65	5.90	7.10	10.10	15.50	21.60	29.65	
5 1/2	4.05	5.00	6.30	7.55	10.75	16.40	22.80	31.20	
6	4.35	5.35	6.70	8.00	11.40	17.30	24.00	32.75	
6 1/2	4.65	5.70	7.10	8.45	12.05	18.20	25.20	34.30	
7	4.95	6.05	7.50	8.90	12.70	19.10	26.40	35.85	
7 1/2	5.25	6.40	7.90	9.35	13.35	20.00	27.60	37.40	
8	5.55	6.75	8.30	9.80	14.00	20.90	28.80	38.95	
9	6.15	7.45	9.10	10.70	15.20	22.05	31.00	41.80	
10	6.75	8.15	9.90	11.60	16.40	24.40	33.20	44.65	
11	....	8.90	10.80	12.50	17.70	26.25	35.50	47.65	
12	....	9.65	11.70	13.60	19.00	28.10	37.90	50.75	
13	STANDARD PACKAGE QUANTITY.—1/4				20.30	29.95	40.50	54.25	
14	and 5/16", 100; 3/8", 1/2", 5/8" and 3/4" up				21.60	31.85	43.10	57.75	
15	to 6" inc., 50; 3/8" longer than 6", 3/4", 1"				22.90	33.75	45.75	61.35	
16	and 1" up to 10" inc., 25; 1" longer				24.20	35.65	48.40	64.95	

Less than standard container quantities take 10% higher list. Intermediate lengths take next higher list.

Add for Skein Bolts, per 100

.... \$ .50 \$ .70 \$1.00 \$1.50 \$2.25 \$3.25 \$5.00 \$7.00

Add for Mfr's. Standard Hexagon Head, per 100

.... \$ .20 \$ .30 \$ .45 \$ .65 \$1.00 \$1.40 \$2.20 \$3.00

Add for U.S. Standard Hexagon Head, per 100

.... \$ .40 \$ .60 \$ .90 \$1.30 \$2.00 \$2.50 \$3.50 \$5.00

## Barrett Shields for Lag Screws

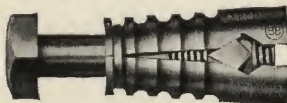


Expansion is produced by the stock of the screw bearing on the smooth tops of high and heavy threads.

Diam. Lag Screw In.	LENGTH, INCHES Long Pattern	Short Pattern	O. D. Shield and Size of Drill Inches	Price per 100
1/4	1 1/4	...	7/16	\$15.00
5/16	1 3/4	...	1 1/2	18.00
3/8	2 1/2	1 3/4	5/8	25.00
7/16	2 3/4	...	1 1/16	32.00
1/2	3	2	3/4	38.00
5/8	3 1/4	2	7/8	45.00
3/4	3 1/2	2	1	65.00

Sebco Malleable Iron Bottom Bearing  
Expansion Shields

## Machine Bolt Type

For hanging pipes, etc.,  
from ceilings.Well adapted for use with  
threaded rods, pipe hangers,  
etc.

Diam- eter Bolt Inches	Length Shield Inches	O.D. and Drill Required Inches	Std. Pkg.	Shipping Weight Pounds per 100	Price Shield Only per 100
1/4	1	1/2	100	3	\$15.00
5/16	1 3/4	9/16	100	7	18.00
3/8	2	3/4	100	12	25.00
7/16	2	7/8	50	16	32.00
1/2	2 1/2	7/8	50	20	38.00
5/8	2 1/2	1 1/8	25	28	45.00
3/4	4	1 3/8	20	52	65.00

## Ackerman-Johnson Expansive Screw Anchors



Anchor Nut

The Ackerman-Johnson Expansive Screw Anchor consists of a hard, bi-conoidal, internally threaded nut, within a lead-composition expansive sleeve.

These are assembled at factory to permit handling as one piece, the sleeve being forced partly over the anchor-nut as shown in assembled illustration.

For attaching fixtures or wiring to any stone-like material as concrete, brick, tile, etc., these anchors excel particularly in holding power, ease of installation and neatness of workmanship.

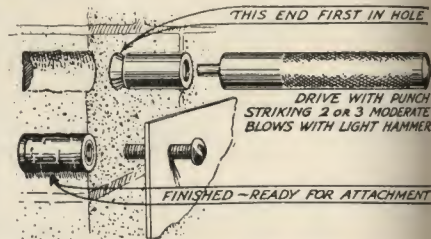


Expansive Sleeve



Anchor, Assembled

While their holding power exceeds the tensile strength of screw or bolt of correlating size, they require much smaller drilled holes than other types, thus affording a considerable saving in the labor of drilling; there is further saving of cost in the operation of expanding the anchor, which is done correctly and instantly by means of a setting punch in-

cluded with every pack-  
age of an-  
chors.When in-  
stalled, as il-  
lustrated, the  
sleeve is  
driven far-  
ther toward  
the base of  
tapered nut,  
being thereby  
expanded and  
wedged tightly  
against the  
sides of the  
hole, giving  
perfect holding  
contact through-  
out the length  
and circum-  
ference of the  
anchor.

Method of Installing Anchors

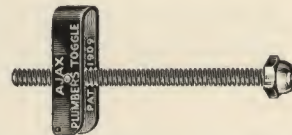
To determine the size of the anchor best suited for the work, first select the screw or bolt preferred and then anchors of corresponding size No. Example: For work requiring No. 10-24 screws, specify No. 10-24 anchor; if 3/8-inch bolts are required, then use No. 3/8-inch anchor.

## Anchors Without Screws

Anchor Size No.	MIN. DIMENSIONS HOLES REQUIRED, INCHES Diam.	Depth	Wt. Lbs. per 100	Price per 100
6x32	1/4	3/8	7 1/2	\$3.80
8x32	5/16	1/2	15	4.50
10x24	3/8	5/8	22 1/2	4.95
12x24	7/16	3/4	34	6.50
1/4x20	1/2	7/8	50 1/2	7.20
5/16x18	5/8	1	95	9.75
3/8x16	3/4	1 1/4	162	12.00
7/16x14	7/8	1 1/2	231	15.00
1/2x13	7/8	1 1/2	221	15.00
5/8x11	1 1/8	2	512	25.00

Packed 50 or 100 in box. Setting punch included in every package.

## Plumbers' Ajax Toggle Bolts



Has a removable nickel-plated head so that it can be inserted in the wall before the object to be fastened is slipped over the bolt.

Size Inches	Price per 100	Size Inches	Price per 100
3/16x3	\$6.60	1/4x3	\$8.00
3/16x4	7.00	1/4x4	8.40
3/16x6	7.80	1/4x6	9.20



### Brass Expansion Joints

#### Screwed, Standard Traverse



Size In.	Traverse In.	Price Each	Size In.	Traverse In.	Price Each
1/2	2	\$1.50	1 1/2	2 1/4	\$5.00
3/4	2 1/4	2.20	2	2 1/2	8.00
1	2 1/4	2.75	2 1/2	2 1/2	17.50
1 1/4	2 1/4	4.00	3	2 3/4	24.00

#### Screwed, Special Traverse

Size Inches	PRICE, EACH—				
	TRAVERSE, INCHES				
	4	*6	8	10	12
1/2	\$3.80	.....	.....	.....	.....
3/4	4.00	\$8.25	\$9.00	\$9.75	\$10.50
1	4.90	9.00	10.00	11.00	12.00
1 1/4	6.30	10.00	11.25	12.50	13.75
1 1/2	7.40	11.50	13.00	14.50	16.00
2	9.10	13.50	15.50	17.50	19.50
2 1/2	.....	24.00	27.00	30.00	33.00

### Iron Body Expansion Joints

#### Brass Sleeves



No. 398, Screwed



No. 401, Flanged

#### Screwed, Standard Traverse

Size Inches	Traverse In.	Price Each	Size In.	Traverse In.	Price Each	Size Inches	Traverse In.	Price Each
2	2 1/2	\$7.00	4 1/2	3 1/2	\$30.00	9	7	\$110.00
2 1/2	2 1/2	8.00	5	4	38.00	10	7	160.00
3	2 3/4	10.00	6	5	45.00	12	8	225.00
3 1/2	3	14.00	7	6	70.00	..	..	.....
4	3 1/4	18.00	8	7	100.00	..	..	.....

#### Screwed, Special Traverse

Size Inches	PRICE, EACH—					
	TRAVERSE, INCHES					
	*6	10	12	14	16	18
2	\$11.00	\$16.00	\$18.50	\$21.00	\$23.50	\$26.00
2 1/2	13.00	19.00	22.00	25.00	28.00	31.00
3	17.50	25.00	29.00	33.00	37.00	41.00
3 1/2	25.00	35.00	40.00	45.00	50.00	55.00
4	30.00	42.00	48.00	54.00	60.00	66.00
4 1/2	40.00	52.00	60.00	67.00	75.00	.....
5	45.00	62.00	70.00	78.00	86.00	94.00
6	55.00	80.00	92.50	105.00	117.50	130.00
7	.....	100.00	115.00	130.00	145.00	.....
8	.....	140.00	160.00	.....	.....	.....

#### Flanged, Standard Traverse

Size Inches	Traverse Inches	Diam. Flanges Inches	Price Each	Size Inches	Traverse Inches	Diam. Flanges Inches	Price Each
2	2 1/2	6	\$15.00	7	6	12 1/2	\$80.00
2 1/2	2 1/2	7	16.00	8	7	13 1/2	110.00
3	2 3/4	7 1/2	18.50	9	7	15	120.00
3 1/2	3	8 1/2	25.00	10	7	16	175.00
4	3 1/4	9	30.00	12	8	19	250.00
4 1/2	3 1/2	9 1/4	40.00	14	10	21	500.00
5	4	10	48.00	15	10	22 1/4	550.00
6	5	11	55.00	16	10	23 1/2	600.00

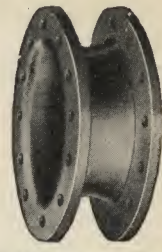
#### Flanged Special Traverse

Size Inches	PRICE, EACH—					
	TRAVERSE, INCHES					
	*6	10	12	14	16	18
2	\$18.00	\$23.00	\$25.50	\$28.00	\$30.50	\$33.00
2 1/2	20.00	26.00	29.00	32.00	35.00	38.00
3	25.00	32.50	36.50	40.50	44.50	48.50
3 1/2	35.00	45.00	50.00	55.00	60.00	65.00
4	40.00	52.00	58.00	64.00	70.00	76.00
4 1/2	50.00	63.00	70.00	77.00	85.00	.....
5	55.00	72.00	80.00	88.00	96.00	104.00
6	65.00	90.00	102.50	115.00	127.50	140.00
7	.....	112.00	127.00	142.00	157.00	172.00
8	.....	150.00	170.00	190.00	210.00	230.00
10	.....	225.00	255.00	285.00	315.00	350.00
12	.....	300.00	350.00	400.00	.....	.....

\*Eastern Traverse.

### Harris Copper Expansion Joints

#### For Low Pressure and Vacuum

B-280 Convex Type  
Cast Iron FlangesB-281 Concave Type  
Split Steel Flanges

The B-280 Convex type has copper turned over on face of flanges to bolt holes, making flanges adjustable. When the B-280 Convex type is to be used horizontally this should be specified so that the joint may be provided with drain bushing.

Steel flanges on B-281 Concave type, are split but are not adjustable. All flanges are drilled to American standard unless specially ordered. Flanges are standard thickness for B-280 Convex type. The lines in which these expansion joints are located should be anchored so as to force joints to operate.

The changes in lengths of steam, water or other piping lines due to the expansion and contraction occasioned by difference in temperature either externally or internally are all compensated for by expansion joints. The most economical, efficient and satisfactory device for this purpose is the flanged corrugated copper expansion joint. With this there are no glands to leak and it can be adapted with equal facility to pressure or vacuum systems.

In designing the joint, proper allowance is made for the strength of the joint either for pressure against collapse or under vacuum and it is designed for a definite and safe amount of expansion and contraction.

Any installation must be so arranged that no more expansion will be experienced than the joint can properly care for. In all cases, the probable maximum movement to be encountered should be specified.

Expansion joints can be furnished in styles different from cuts shown and any special size of face to face desired.

Size In.	FACE TO FACE INCHES		Outside Diameter Flanges In.	Thick. Steel Flanges In.	PRICE, EACH—	
	B-280	B-281			Convex B-280	Concave B-281
4	8	5 1/2	9	3/8	\$50.00	\$50.00
5	9	5 1/2	10	3/8	55.00	55.00
6	9	6	11	1/2	65.00	65.00
7	10	6	12 1/2	1/2	70.00	70.00
8	10	6	13 1/2	1/2	75.00	75.00
9	11	6	15	1/2	85.00	85.00
10	11	6	16	1/2	95.00	95.00
12	11	6	19	1/2	110.00	105.00
14	12	6	21	1/2	130.00	120.00
15	12	6	22 1/4	1/2	140.00	130.00
16	12	6	23 1/2	1/2	150.00	140.00
18	13	6 1/2	25	5/8	160.00	150.00
20	13	6 1/2	27 1/2	5/8	185.00	165.00
22	14	7	29 1/2	3/4	210.00	175.00
24	14	7	32	3/4	230.00	190.00
26	15	8	34 1/4	3/4	260.00	210.00
28	15	8	36 1/2	3/4	300.00	230.00
30	16	8 1/2	38 3/4	7/8	320.00	250.00
32	16	8 1/2	41 3/4	7/8	390.00	290.00
34	17	8 1/2	43 3/4	7/8	420.00	325.00
36	17	8 1/2	46	1	450.00	370.00
38	18	9	48 3/4	1	530.00	400.00
40	18	9	50 3/4	1	570.00	430.00
42	19	9	53	1 1/8	610.00	460.00
48	20	9	59 1/2	1 1/4	780.00	580.00



## Alpha Brass Pipe



This pipe is made from copper, zinc and lead and contains 10 per cent more copper and a little more lead than ordinary brass pipe. Cast from liquid metal in the form of a shell. The Alpha trademark is cut every 12 inches on all sizes of Alpha pipe.

This pipe remains clear and clean, inside and out; it cannot rust. Insures a full, clear flow of water.

Holds a natural appearance; can be nickel plated.

**Table Showing Weight per Lineal Foot of Seamless Brass and Copper Tubing Iron Pipe Sizes**

Iron Pipe Size Inches	Regular			
	Outside Diameter Inches	Inside Diameter Inches	Brass	Copper
1/8	.405	.281	.246	.259
1/4	.540	.375	.437	.459
3/8	.675	.494	.612	.644
1/2	.840	.625	.911	.958
3/4	1.050	.822	1.235	1.298
1	1.315	1.062	1.740	1.829
1 1/4	1.660	1.368	2.557	2.689
1 1/2	1.900	1.600	3.037	3.193
2	2.375	2.062	4.017	4.224
2 1/2	2.875	2.500	5.830	6.130
3	3.500	3.062	8.314	8.741
3 1/2	4.000	3.500	10.85	11.41
4	4.500	4.000	12.29	12.93
4 1/2	5.000	4.500	13.74	14.44
5	5.563	5.062	15.40	16.19
6	6.625	6.125	18.44	19.39
7	7.625	7.062	23.92	25.15
8	8.625	8.000	30.05	31.60
9	9.625	8.937	36.94	38.84
10	10.750	10.019	43.91	46.17
Extra Heavy				
1/8	.405	.205	.353	.371
1/4	.540	.294	.593	.624
3/8	.675	.421	.805	.847
1/2	.840	.542	1.191	1.253
3/4	1.050	.736	1.622	1.706
1	1.315	.951	2.386	2.509
1 1/4	1.660	1.272	3.291	3.460
1 1/2	1.900	1.494	3.986	4.191
2	2.375	1.933	5.508	5.791
2 1/2	2.875	2.315	8.407	8.839
3	3.500	2.892	11.24	11.82
3 1/2	4.000	3.358	13.66	14.37
4	4.500	3.818	16.41	17.25
4 1/2	5.000	4.250	20.07	21.10
5	5.563	4.813	22.51	23.67
6	6.625	5.750	31.32	32.93
7	7.625	6.625	41.22	43.34
8	8.625	7.625	47.00	49.42
Double Extra Heavy				
1/2	.840	.252	1.857	1.953
3/4	1.050	.434	2.644	2.780
1	1.315	.599	3.964	4.168
1 1/4	1.660	.896	5.648	5.939
1 1/2	1.900	1.100	6.942	7.299
2	2.375	1.503	9.871	10.29
2 1/2	2.875	1.771	14.84	15.60
3	3.500	2.300	20.13	21.17
3 1/2	4.000	2.728	24.75	26.03
4	4.500	3.152	29.84	31.37
4 1/2	5.000	3.580	35.24	37.06
5	5.563	4.063	41.76	43.91
6	6.625	4.897	57.59	60.55
7	7.625	5.875	68.33	71.85
8	8.625	6.875	78.46	82.50

## Copper Pipe

Weights are theoretically the same as brass pipe. Carried in stock in sizes 1/8 to 2 inches, inclusive.

## Rough Brass Screwed Fittings

## M. I. Pattern, Iron Pipe Size

For 125 Pounds Steam Working Pressure



No. 625  
90° Elbow



No. 626  
45° Elbow



No. 627  
Tee



No. 628, Y Bend



No. 629, Cross

## Price, Each

Size . . . . . inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Elbows, 90°	\$ .12	\$ .15	\$ .20	\$ .28	\$ .40	\$ .63	\$ .90
Elbows, Reducing	*	.19	.25	.35	.50	.80	1.10
Elbows, 45°	.16	.20	.25	.31	.40	.63	.90
Elbows, Street 90°	.25	.27	.33	.48	.63	.85	1.50
Elbows, Drop, Female	...	...	.35	.45	.65	1.05	1.50
Elbows, Side Outlet	...	...	.60	.85	1.20	1.90	2.75
Tees	.17	.21	.28	.40	.55	.85	1.25
Tees, Reducing	*	.25	.35	.50	.70	1.05	1.55
Tees, Drop, Female	...	...	.43	.57	.80	1.25	...
Tees, 4-Way	...	...	...	1.20	1.65	2.50	3.75
Crosses	.25	.30	.40	.55	.80	1.25	1.80
Crosses, Reducing	*	.38	.50	.70	1.00	1.55	2.25
Bushings, Hexagon	...	.10	.12	.15	.22	.35	.50
Bushings, Face	...	.12	.15	.19	.27	.44	.62
Plugs, Regular	.08	.10	.12	.15	.20	.30	.45
Plugs, Solid	.08	.10	.12	.22	.30	.45	.80
Plugs, Countersunk	...	...	...	.22	.30	.45	.65
Caps	.10	.13	.16	.20	.30	.42	.60
Locknuts	.10	.10	.12	.15	.20	.28	.40
Reducers	...	.15	.20	.28	.40	.60	.90
Couplings	.10	.13	.17	.25	.37	.55	.80
Couplings, R. and L.	...	.17	.22	.30	.45	.70	1.00
Return Bends, Closed	...	...	...	.70	1.00	1.25	1.80
Return Bends, Open	...	...	...	.80	1.10	1.40	2.15
Y Bends	...	...	...	.75	1.10	1.65	2.50
Size . . . . . inches							
Elbows, 90°	1 1/2	2	2 1/2	3	3 1/2	4	
Elbows, Reducing	\$1.20	\$2.00	\$3.50	\$6.00	\$8.00	\$10.00	
Elbows, 45°	1.50	2.50	4.25	7.50	10.00	12.50	
Elbows, Street 90°	1.20	2.00	3.50	6.00	...	10.00	
Elbows, Drop, Female	2.00	3.25	...	...	...	...	
Elbows, Side Outlet	2.00	3.40	...	...	...	...	
Tees	3.60	6.00	10.50	18.00	...	...	
Tees, Reducing	1.70	2.80	5.00	8.50	11.00	14.00	
Tees, 4-Way	2.10	3.50	6.25	10.50	14.00	17.50	
Crosses	5.00	8.50	...	...	...	...	
Crosses, Reducing	2.40	4.00	7.00	12.00	16.00	20.00	
Bushings, Hexagon	3.00	5.00	8.75	15.00	20.00	25.00	
Bushings, Face	.70	1.00	1.50	2.50	3.75	5.00	
Plugs, Regular	.87	1.25	1.85	3.10	4.75	6.25	
Plugs, Solid	.60	.95	1.50	2.25	3.75	5.00	
Plugs, Countersunk	1.20	1.90	3.00	4.50	7.50	10.00	
Caps	.90	1.40	...	...	...	...	
Locknuts	.80	1.25	2.50	3.50	5.50	7.00	
Reducers	.55	.80	1.75	2.75	4.00	5.00	
Couplings	1.10	1.75	2.75	4.00	6.00	8.00	
Couplings, R. and L.	1.00	1.60	2.50	3.50	5.25	7.00	
Return Bends, Closed	1.30	2.00	3.10	4.50	...	...	
Return Bends, Open	2.50	4.25	...	...	...	...	
Y Bends	3.00	4.75	8.25	11.00	...	...	
	3.30	5.50	9.50	16.00	...	26.00	

Right and left elbows and right and left return bends furnished at an advance of 25 per cent over above list.

\*Elbows, tees, crosses, bushings and reducers, reducing more than two sizes, will be furnished at an advance of 25 per cent over above reducing list prices.



## Finished Brass Screwed Fittings

M. I. Pattern, Iron Pipe Size, Polished and Buffed

For 125 Pounds Steam Working Pressure

No. 630  
90° ElbowNo. 631  
45° Elbow

No. 632, Tee



No. 633, Y Bend



No. 634, Cross

## Price, Each

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Elbows, 90°	\$ .30	\$ .35	\$ .45	\$ .56	\$ .75	\$ 1.10	\$ 1.55
Elbows, Reducing	*	.44	.55	.70	.95	1.40	1.90
Elbows, 45°	.38	.45	.55	.66	.85	1.23	1.70
Elbows, Street	.47	.52	.63	.83	1.08	1.45	2.30
Elbows, Drop, Female			.85	1.05	1.40	2.00	2.80
Elbows, Side Outlet			1.35	1.70	2.25	3.30	4.70
Tees	.42	.49	.63	.80	1.05	1.50	2.15
Tees, Reducing	*	.60	.77	1.00	1.30	1.85	2.65
Tees, Drop, Female			1.13	1.37	1.80	2.55	
Tees, 4-Way				2.05	2.70	3.90	5.70
Crosses	.60	.70	.90	1.10	1.50	2.20	3.10
Crosses, Reducing	*	.88	1.10	1.40	1.85	2.75	3.85
Bushings		.22	.27	.35	.47	.70	1.00
Plugs, Regular	.23	.30	.37	.43	.55	.75	1.00
Plugs, Solid			.43	.50	.65	.90	1.35
Plugs, Countersunk				.42	.55	.80	1.15
Caps	.20	.25	.31	.40	.55	.77	1.10
Lock-nuts	.24	.25	.32	.40	.50	.65	.85
Reducers	*	.35	.45	.56	.75	1.05	1.55
Couplings	.24	.28	.36	.46	.63	.90	1.30
Couplings, R. and L.		.37	.47	.58	.80	1.15	1.65
Return Bends, Close				1.55	2.05	2.65	3.75
Return Bends, Open				1.65	2.15	2.80	4.10
Y Bends				1.60	2.15	3.05	4.45

Size	1 1/2	2	2 1/2	3	3 1/2	4
Elbows, 90°	\$ 2.00	\$ 3.00	\$ 5.50	\$ 9.00	\$ 14.00	\$ 17.50
Elbows, Reducing	2.50	3.75	6.75	11.25	17.50	22.00
Elbows, 45°	2.20	3.25	6.00	9.75		19.50
Elbows, Street	3.00	4.50				
Elbows, Drop, Female	3.60	5.40				
Elbows, Side Outlet	6.00	9.00	16.50	27.00		
Tees	2.80	4.20	7.75	12.75	19.50	24.50
Tees, Reducing	3.50	5.25	9.75	15.80	24.50	30.50
Tees, 4-Way	7.40	11.50				
Crosses	4.00	6.00	11.00	18.00	28.00	35.00
Crosses, Reducing	5.00	7.50	13.75	22.50	35.00	44.00
Bushings	1.40	2.00	3.00	4.50	6.25	8.00
Plugs, Regular	1.30	1.95	3.00	4.25	6.25	8.00
Plugs, Solid	1.90	2.90	4.50	6.50	10.00	13.00
Plugs, Countersunk	1.55	2.25				
Caps	1.50	2.25	4.00	5.50	8.00	10.00
Lock-nuts	1.10	1.60	3.25	4.75	6.50	8.00
Reducers	1.90	2.75	4.75	7.00	12.00	15.50
Couplings	1.60	2.35	4.00	5.75	9.75	12.50
Couplings, R. and L.	2.10	3.00	5.10	7.50		
Return Bends, Close	4.90	7.25				
Return Bends, Open	5.40	7.75	14.25	20.00		
Y Bends	5.70	8.50	15.50	25.00		41.00

Right and Left Elbows, and Right and Left Return Bends will be furnished at an advance of 25 per cent over above list prices.

\*Elbows, Tees, Crosses, Bushings and Reducers, reducing more than two sizes, will be furnished at an advance of 25 per cent over above reducing list prices.

## Nickel-Plated Brass Screwed Fittings

Iron Pipe Size, Polished and Buffed

For 125 Pounds Steam Working Pressure



No. 635, 90° Elbow



No. 636, 45° Elbow



No. 637, Tee



No. 638, Y Bend



No. 639, Cross

## Price, Each

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Elbows	\$ .36	\$ .42	\$ .53	\$ .65	\$ .87	\$ 1.25	\$ 1.75
Elbows Reducing	*	.52	.65	.82	1.10	1.60	2.15
Elbows 45°	.45	.53	.65	.78	1.00	1.43	1.95
Elbows Street	.54	.60	.73	.95	1.23	1.65	2.55
Elbows Drop, Female			1.00	1.25	1.65	2.30	3.20
Elbows Side, Outlet			1.60	2.00	2.60	3.75	5.35
Tees	.50	.58	.75	.93	1.22	1.70	2.45
Tees Reducing	*	.72	.90	1.15	1.50	2.10	3.00
Tees Drop, Female			1.33	1.62	2.15	2.95	
Tees 4-Way			2.35	3.05	4.35	6.35	
Crosses	.72	.84	1.05	1.30	1.75	2.50	3.50
Crosses Reducing	*	1.05	1.30	1.65	2.15	3.15	4.35
Bushings		.26	.32	.42	.55	.82	1.15
Plugs	.28	.37	.45	.52	.67	.90	1.20
Solid Plugs	.28	.37	.45	.59	.77	1.05	1.55
Countersunk Plugs				.49	.63	.92	1.30
Caps	.23	.29	.36	.47	.63	.89	1.25
Lock-nuts	.29	.30	.39	.48	.60	.77	1.00
Reducers		.42	.53	.65	.87	1.20	1.75
Couplings	.29	.33	.42	.53	.72	1.00	1.45
Couplings R. & L.		.44	.55	.67	.92	1.30	1.85
Return Bends, Close				1.85	2.40	3.10	4.40
Return Bends, Open				1.95	2.50	3.25	4.75
Y Bends				1.90	2.50	3.50	5.10

Size	1 1/2	2	2 1/2	3	3 1/2	4
Elbows	\$ 2.25	\$ 3.35	\$ 6.15	\$ 10.00	\$ 16.00	\$ 20.00
Elbows Reducing	2.85	4.15	7.60	12.50	20.00	25.00
Elbows 45°	2.55	3.65	6.85	11.00		22.50
Elbows Street	3.35	4.90				
Elbows Drop, Female	4.10	6.00				
Elbows Side, Outlet	6.80	10.00	18.50	30.00		
Tees	3.15	4.65	8.65	14.00	22.30	28.00
Tees Reducing	3.95	5.85	10.90	17.50	28.00	35.00
Tees Drop, Female						
Tees 4-Way	8.20	12.50				
Crosses	4.50	6.70	12.30	20.00	32.00	40.00
Crosses Reducing	5.70	8.30	15.40	25.00	40.00	50.00
Bushings	1.65	2.35	3.50	5.15	7.10	9.00
Plugs	1.55	2.30	3.50	4.90	7.10	9.00
Solid Plugs	2.15	3.25	5.00	7.15	10.85	14.00
Countersunk Plugs	1.75	2.55				
Caps	1.75	2.60	4.50	6.15	8.85	11.00
Lock-nuts	1.30	1.85	3.75	5.40	7.35	9.00
Reducers	2.15	3.10	5.40	8.00	14.00	18.00
Couplings	1.80	2.60	4.50	6.50	11.25	14.25
Couplings R. & L.	2.35	3.35	5.75	8.50		
Return Bends, Close	5.70	8.25				
Return Bends, Open	6.20	8.75	16.25	23.00		
Y Bends	6.50	9.50	17.50	28.00		46.00

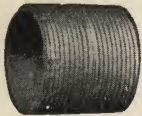
Right and left elbows and right and left return bends will be furnished at an advance of 25 per cent over above list. Can be furnished chromium plated. Prices upon application.

\*Elbows, tees, crosses, bushings and reducers, reducing more than two sizes will be furnished at an advance of 25 per cent over above reducing list prices.

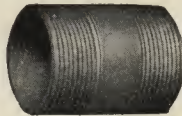


## Brass Nipples

## Iron Pipe Size



No. 652, Close



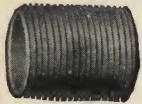
No. 653, Shoulder

Size Inches	Length Close Inches	PRICE, ROUGH, EACH LENGTH, INCHES				
		Close	1½	2	2½	3
1/8	3/4	\$ .11	\$ .13	\$ .15	\$ .17	\$ .19
1/4	7/8	.13	.16	.19	.22	.25
3/8	1	.15	.19	.23	.27	.31
1/2	1 1/8	.23	.25	.30	.35	.40
3/4	1 3/8	.28	...	.35	.42	.49
1	1 1/2	.37	...	.44	.53	.62
1 1/4	1 5/8	.60	...	...	.75	.88
1 1/2	1 3/4	.70	...	...	.90	1.05
2	2	1.00	...	...	1.20	1.40

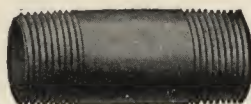
Size Inches	PRICE, ROUGH, EACH LENGTH, INCHES				
	3½	4	4½	5	5½
1/8	\$ .21	\$ .23	\$ .25	\$ .27	\$ .29
1/4	.28	.31	.34	.37	.40
3/8	.35	.39	.43	.47	.51
1/2	.45	.50	.55	.60	.65
3/4	.56	.63	.70	.77	.84
1	.71	.80	.89	.98	1.07
1 1/4	1.01	1.14	1.27	1.40	1.53
1 1/2	1.20	1.35	1.50	1.65	1.80
2	1.60	1.80	2.00	2.20	2.40

Polished brass nipples, longer than close, 25 per cent extra.  
Nickel-plated nipples, 50 per cent extra.  
Chromium-plated nipples, prices upon application.

## Extra Heavy Brass Nipples



Close Nipple



Long Nipple

Size Inches	Length Close Inches	PRICE, EACH LENGTH, INCHES				
		Close	1½	2	2½	3
1/8	3/4	\$ .22	\$ .26	\$ .30	\$ .34	\$ .38
1/4	7/8	.26	.32	.38	.44	.50
3/8	1	.30	.38	.46	.54	.62
1/2	1 1/8	.46	.50	.60	.70	.80
3/4	1 3/8	.56	...	.70	.84	.98
1	1 1/2	.74	...	.88	1.06	1.24
1 1/4	1 5/8	1.20	...	...	1.50	1.76
1 1/2	1 3/4	1.40	...	...	1.80	2.10
2	2	2.00	...	...	2.40	2.80
2 1/2	2 1/2	3.40	...	...	...	4.00
3	2 5/8	5.00	...	...	...	5.80
3 1/2	2 3/4	8.00	...	...	...	...
4	2 7/8	9.50	...	...	...	...

Size Inches	PRICE, EACH LENGTH, INCHES				
	3½	4	4½	5	5½
1/8	\$ .42	\$ .46	\$ .50	\$ .54	\$ .58
1/4	.56	.62	.68	.74	.80
3/8	.70	.78	.86	.94	1.02
1/2	.90	1.00	1.10	1.20	1.30
3/4	1.12	1.26	1.40	1.54	1.68
1	1.42	1.60	1.78	1.96	2.14
1 1/4	2.02	2.28	2.54	2.80	3.06
1 1/2	2.40	2.70	3.00	3.30	3.60
2	3.20	3.60	4.00	4.40	4.80
2 1/2	4.60	5.20	5.80	6.40	7.00
3	6.60	7.40	8.20	9.00	9.80
3 1/2	...	10.80	12.00	13.20	14.40
4	...	12.30	13.70	15.10	16.50

\*These lengths conform to the manufacturers' standard.  
Extra heavy copper nipples furnished at special prices.

## Extra Heavy Brass Screwed Fittings

Cast Iron Pattern, Iron Pipe Size  
For 250 Pounds Steam Working Pressure



No. 649, Elbow



No. 650, Tee

Size Inches	Rough	PRICE, EACH				
		1/4	3/8	1/2	3/4	1
Elbows, 90° each	\$ .33	\$ .45	\$ .65	\$ 1.00	\$ 1.50	\$ 2.25
Reducing "	...	.55	.75	1.20	1.80	2.60
45° "	.45	.55	.75	1.10	1.65	2.50
R. and L. "	.40	.45	.75	1.20	1.80	2.60
Tees "	.45	.60	.90	1.35	2.00	3.00
Reducing "	...	.70	1.05	1.55	2.30	3.50
Crosses "	...	...	1.30	2.00	3.00	4.50
Reducing "	...	...	1.50	2.40	3.60	5.25
Couplings "	...	.50	.70	1.10	1.65	2.25
Return Bends, Close "	...	...	1.65	2.50	3.50	5.00
Open "	...	...	1.80	2.75	4.00	5.50
Y Bends "	...	...	1.50	2.50	3.50	5.50

Size Inches	Rough	PRICE, EACH				
		1 1/2	2	2 1/2	3	3 1/2
Elbows, 90° each	\$ 3.00	\$ 4.50	\$ 8.00	\$ 11.25	\$ 16.00	\$ 22.00
Reducing "	3.50	5.25	9.00	13.00	19.00	25.00
45° "	3.25	4.50	8.00	11.25	16.00	22.00
R. and L. "	3.50	5.25	9.00	13.00	...	...
Tees "	4.00	6.00	10.75	15.00	22.00	30.00
Reducing "	4.50	6.75	12.00	17.00	25.00	35.00
Crosses "	6.00	9.00	16.00	22.50	28.00	37.00
Reducing "	7.00	10.50	18.00	26.00	32.00	42.00
Couplings "	3.00	4.50	7.00	10.00	13.00	17.00
Return Bends, Close "	7.00	10.00	...	...	...	...
Open "	8.00	11.00	...	...	...	...
Y Bends "	7.25	11.00	19.00	27.00	33.00	45.00

## Standard Brass Unions

## Ground Joints

For 150 Pounds Steam Working Pressure

Size In.	PRICE, EACH				
	Rough	Semi-Fin.	Polished	N. P.	Pol. Tinned
1/8	\$ .40	\$ .45	\$ .50	\$ .60	\$ .65
1/4	.50	.55	.60	.72	.75
3/8	.65	.75	.85	1.02	1.05
1/2	.85	.95	1.05	1.25	1.30
3/4	1.15	1.30	1.40	1.68	1.70
1	1.60	1.75	1.90	2.28	2.35
1 1/4	2.25	2.50	2.75	3.30	3.30
1 1/2	2.70	3.00	3.25	3.90	3.85
2	4.00	4.50	5.00	6.00	5.90
2 1/2	7.50	8.25	9.00	10.80	10.20
3	11.50	12.75	14.00	16.80	16.25
3 1/2	20.00	22.50	25.00	30.00	28.00
4	27.00	30.00	33.00	39.50	36.75

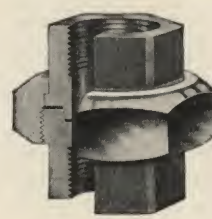
Prices for acid-resisting metal upon application.



## Extra Heavy Brass Unions

## Ground Joints

For 250 Pounds Steam Working Pressure



No. 656

Size In.	PRICE, EACH		
	Rough	Polished	Polished and N. P.
1/8	\$ .85	\$ 1.10	\$ 1.30
1/4	1.10	1.35	1.55
3/8	1.40	1.70	1.95
1/2	1.60	1.95	2.25
3/4	1.85	2.25	2.60
1	3.00	3.50	4.00
1 1/4	4.00	4.60	5.20
1 1/2	5.25	5.90	6.55
2	7.50	8.40	9.20
2 1/2	10.00	11.50	12.75
3	15.00	18.00	21.50
3 1/2	24.00	27.50	31.00
4	35.00	40.00	44.00



**Walworth W Brass Globe and Angle Valves**

For 100 Pounds Steam Working Pressure



No. 3201, Globe Valve



No. 3202, Angle Valve

Equipped with ventilated non-heating wheel.  
Can be repacked while under pressure when valve is wide open.

Except where specifically stated, ratings are maximum working steam pressures. For water at normal temperatures, ratings on some lines may be raised. In general, small sizes, on account of foundry limitations, are much heavier than necessary for conditions as rated. Other considerations, however, prevent recommending them for steam pressures in excess of those shown.

Size Inches	Screwed Price Each	Size Inches	Screwed Price Each
1/4	\$.72	1 1/4	\$2.52
3/8	.77	1 1/2	3.50
1/2	1.00	2	5.30
3/4	1.26	2 1/2	10.00
1	1.80	3	14.40

**Walworth Bronze Globe and Angle Valves**

Standard Pattern

With Ventilating Non-Heating Wheel

For 125 Pounds Steam Working Pressure



No. 3204, Globe Valve



No. 3205, Angle Valve

Can be repacked while under pressure if valve is wide open.

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/8	\$.72	1	\$1.80	3	\$14.40
1/4	.72	1 1/4	2.52	3 1/2	26.50
3/8	.77	1 1/2	3.50	4	36.00
1/2	1.00	2	5.30	...	.....
3/4	1.26	2 1/2	10.00	...	.....

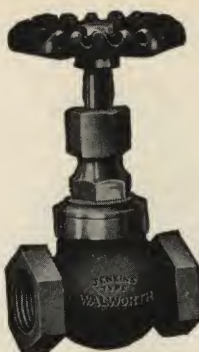
**Walworth Jenkins Type Brass Globe and Angle Valves**With Ventilating Non-Heating  
Wheels

For 125 Pounds Steam Working Pressure

Size In.	PRICE, EACH		Size In.	PRICE, EACH	
	No. 3260 Globe	No. 3261 Angle		No. 3260 Globe	No. 3261 Angle
1/4	\$1.10	\$1.10	1 1/4	\$4.00	\$4.00
3/8	1.25	1.25	1 1/2	5.50	5.50
1/2	1.60	1.60	2	8.75	8.75
3/4	2.20	2.20	2 1/2	15.75	15.75
1	2.80	2.80	3	22.00	22.00

Sizes 3/4-inch and larger can be repacked while under pressure when valve is wide open.

These valves can be furnished with leather disc at special price.

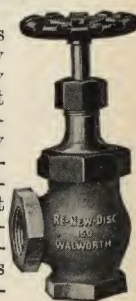


No. 3260 Globe Valve

**Walworth Re-New-Disc Bronze Globe and Angle Valves**

Renewable Composition Disc

For 150 Pounds Steam Working Pressure

No. 227, Globe  
ScrewedNo. 227A, Angle  
Screwed

A disc holder, which slips on the stem, is accurately guided and held in place by lugs which fit snugly against inner walls of bonnet chamber, can be removed quickly and easily, and new composition disc inserted. Malleable iron stuffing box nut and bonnet ring give additional durability and permit unscrewing these parts any number of times without injury to the valve.

The valve has gland in stuffing box, ventilated malleable iron hand wheel and rugged body construction. For steam service it is furnished with hard composition discs. For cold water, gas, or air, soft composition may be used. Discs of steam metals are available for special service.

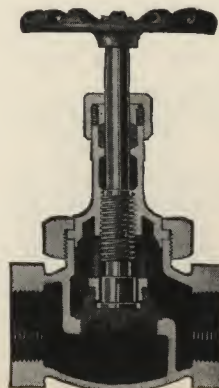
Size Inches	Se. End to End Globe Inches	Se. Center to End Angle Inches	PRICE, EACH	
			No. 227, GLOBE Screwed	No. 227A, ANGLE Flanged
1/4	2 1/16	1 5/16	\$1.10	.....
3/8	2 3/16	1 11/16	1.25	.....
1/2	2 11/16	1 3/4	1.60	.....
3/4	3 3/16	1 7/8	2.20	\$5.00
1	3 3/4	1 3/4	2.80	6.00
1 1/4	4 1/4	2 1/16	4.00	9.00
1 1/2	4 3/4	2 1/4	5.50	11.00
2	5 7/8	2 3/4	8.75	16.50
2 1/2	6 3/4	3 1/4	15.75	25.00
3	8	3 13/16	22.00	34.00

Flanged valves are made to order only.

**Walworth Bronze Globe, Angle and Cross Valves**Renewable and Regrinding Seat  
and Disc, Union Bonnet

For 200 Pounds Steam Working Pressure

Has removable nickel-copper alloy seat and disc. Ventilating non-heating hand wheel.



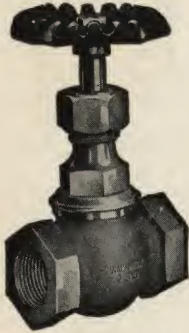
No. S207B, Globe

Size In.	PRICE, EACH		Size In.	PRICE, EACH	
	S207B Globe	S207D Cross		S207B Globe	S207D Cross
1/4	\$1.10	\$1.70	1 1/2	\$5.50	\$6.25
3/8	1.25	2.00	2	8.75	9.50
1/2	1.60	2.25	2 1/2	15.75	20.00
3/4	2.20	2.50	3	22.00	27.50
1	2.80	3.25	4	50.00	60.00
1 1/4	4.00	4.75	...	.....	.....



## Walworth Brass Globe and Angle Valves

With Ventilated Non-Heating Wheel

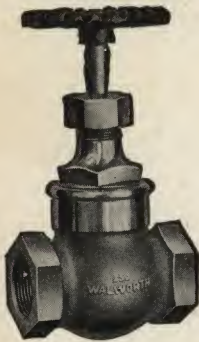
For 250 Pounds Steam Working Pressure (Saturated)  
Tested to 800 Pounds Hydrostatic PressureNo. 3230, Globe  
ScrewedNo. 3231, Angle  
Screwed

These valves have gland in stuffing box. They can be re-packed while under pressure when the valve is wide open.

Size Inches	Screwed Each	Size Inches	Screwed Each
1/4	\$1.30	1 1/4	\$5.00
3/8	1.50	1 1/2	7.00
1/2	1.90	2	11.00
3/4	2.50	2 1/2	20.00
1	3.50	3	29.00

## Walworth Brass Globe and Angle Valves

For 250 Pounds Steam Working Pressure



No. 3235 Globe, Screwed



No. 3236 Angle, Screwed

Valve with gland in stuffing box. Ventilated non-heating wheel.

Can be repacked while under pressure when valve is wide open.

Nos. 3235 and 3236 are regularly furnished with convex seats and discs but can be supplied with renewable copper discs at same prices.

Size Inches	Face to Face Inches Flanged	Center to Face Inches Flanged	Diameter Flanges Inches	PRICE, EACH	
				No. 3235, Globe Screwed	No. 3237, Globe No. 3236, Angle No. 3238, Angle Flanged
1/2	...	...	...	\$3.75	...
3/4	...	...	...	4.25	...
1	3 5/16	2 7/8	4 1/2	5.50	\$11.00
1 1/4	4 1/2	3 3/16	5	7.75	15.00
1 1/2	5 3/16	3 3/4	6	10.00	21.00
2	6 3/16	4 1/16	6 1/2	15.00	28.00
2 1/2	7 7/16	4 1/16	7 1/2	27.50	45.00
3	8 7/8	5 3/16	8 1/4	38.50	68.00

Flanged valves made to order only.

Jenkins Bronze Globe and Angle Valves  
For 150 Pounds Steam Working Pressure, 250 Pounds WaterNo. 106, Globe  
ScrewedNo. 107, Globe  
FlangedNo. 108, Angle  
Screwed

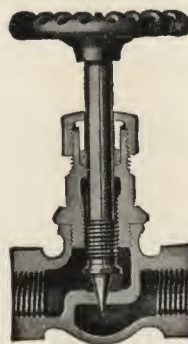
Instead of using a solid metal clapper, Jenkins Valves contain a disc holder, made of bronze, and a renewable composition genuine Jenkins Disc. The Jenkins disc in service presents a slightly yielding surface to the valve seat, and is flexible enough to adapt itself to any slight inequalities in the seat, thus insuring perfect contact.

Size Inches	Face to Face Inches Flanged	Center to Face Inches Flanged	Diam. Flanges Inches	PRICE, EACH	
				No. 106, Globe No. 108, Angle Screwed	No. 107, Globe No. 109, Angle Flanged
1/8	...	...	...	\$1.10	...
1/4	2 7/16	1 29/32	2 1/2	1.10	\$3.50
3/8	3	2 1/16	2 1/2	1.25	4.00
1/2	3 1/16	2 1/4	3 1/2	1.60	4.00
3/4	3 5/8	2 1/2	3 7/8	2.20	5.00
1	4	2 3/4	4 1/4	2.80	6.00
1 1/4	4 3/8	2 5/8	4 5/8	4.00	9.00
1 1/2	4 7/8	3 3/16	5	5.50	11.00
2	6	3 3/4	6	8.75	16.50
2 1/2	6 3/4	4 1/4	7	15.75	25.00
3	7 1/2	4 9/16	7 1/2	22.00	34.00

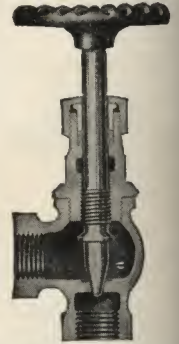
Walworth Standard Needle Point Bronze  
Globe and Angle Valves

With Ventilated Non-heating Wheels

For 200 Pounds Steam Working Pressure



No. 3215 Globe



No. 3217 Angle

Needle point valves are designed to meet the requirements of oil burning apparatus. They have a long taper seat and a fine stem thread which permits of very close adjustment, and the stuffing box has a gland. Steel stems for gasoline, brass stems for fuel oil. Brass stem needle valves furnished, unless steel stem is specified. Valves furnished with seal openings.

Size In.	Diam. Opening Brass Stem	Diam. Opening Steel Stem	PRICE, EACH			
			WITH BRASS STEM		WITH STEEL STEM	
			No. 3215 Globe	No. 3217 Angle	No. 3216 Globe	No. 3218 Angle with Seal
1/8	1/8	3/64	\$1.20	\$1.20	\$1.20	\$1.20
1/4	3/16	1/16	1.40	1.40	1.40	1.40
3/8	1/4	3/32	1.50	1.50	1.50	1.50
1/2	5/16	1/8	2.00	2.00	2.00	2.00
3/4	7/16	3/16	2.50	2.50	2.50	2.50



**Walworth Bronze Check Valves**

For 125 Pounds Steam Working Pressures

**No. 3221 Globe**

Size In.	Face to Face Flgd., In.	Diam. Flanges In.	PRICE, EACH No. 3221 Screwed	PRICE, EACH No. 3224 Flanged
1/8	...	...	\$.65	Flanged
1/4	...	...	.65	Valves
3/8	...	...	.70	Made to
1/2	...	...	.90	Order
3/4	...	...	1.15	Only
1	3 1/2	4 1/4	1.60	\$6.50
1 1/4	4	4 5/8	2.25	8.25
1 1/2	4 5/8	5	3.15	10.15
2	5 1/2	6	4.75	15.50
2 1/2	5 7/8	7	9.00	22.00
3	6 1/2	7 1/2	13.00	33.50
3 1/2	8 1/4	8 1/2	24.00	47.50
4	8 7/8	9	32.50	66.50



No. 3221

**No. 3226 Vertical**

Size Inches	Screwed Price Each	Size Inches	Screwed Price Each
3/8	\$ .77	1 1/2	\$3.50
1/2	1.00	2	5.30
3/4	1.26	2 1/2	10.00
1	1.80	3	14.40
1 1/4	2.52	...	.....

**No. 3227 Angle**

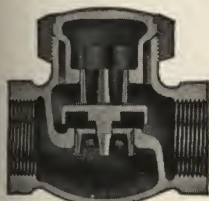
Size Inches	Screwed Price Each	Size Inches	Screwed Price Each
3/8	\$ .77	1 1/2	\$3.50
1/2	1.00	2	5.30
3/4	1.26	2 1/2	10.00
1	1.80	3	14.40
1 1/4	2.52	...	.....

**Brass Check Valves****Horizontal and Angle**

With Crane Renewable Disc

Union Bonnet with Malleable Iron Union Ring

For 150 Pounds Steam Working Pressure

No. 27, Horizontal  
ScrewedNo. 27, Angle  
Screwed

If valves are wanted for hot water service, they can be furnished with Crane renewable hot water discs; for cold water they can be furnished with Crane renewable cold water discs, at the same price.

When valves are ordered for compressed air service, they are given a special test before shipping and are furnished at a special price.

Fitted with Crane steam discs unless otherwise ordered.

Size Inches	Face to Face Flanged Inches	Center to Face Flanged Inches	Diameter Flanges Inches	PRICE, EACH No. 27 Screwed	PRICE, EACH No. 29 Flanged
1/4	...	...	...	\$1.10	.....
3/8	...	...	...	1.20	.....
1/2	...	...	...	1.30	.....
3/4	3 3/4	2 1/4	3 1/2	1.90	\$4.75
1	4 3/8	2 1/2	4	2.60	5.50
1 1/4	4 7/8	2 7/8	4 1/2	3.60	7.80
1 1/2	5 1/2	3 3/8	5	5.00	9.80
2	6 1/2	3 3/4	6	7.50	15.00
2 1/2	7 1/2	4 3/8	7	13.50	22.80
3	8 7/8	4 3/4	7 1/2	20.50	32.40

**Walworth Brass Globe and Angle Check Valves**

For 250 Pounds Steam Working Pressure

No. 3243 Globe Check  
ScrewedNo. 3245 Angle Check  
Screwed

Bonnet threads of valve are long and metal sections are liberal.

The seat and disc are convex insuring tightness.

Ratings given are maximum working steam pressures and temperatures.

Size Inches	Face to Face Inches Flanged	Center to Face Inches Flanged	Diameter Flanges Inches	PRICE, EACH No. 3243 Globe Check Screwed	PRICE, EACH No. 3245 Angle Check Screwed
1/2	...	...	...	\$1.75	.....
3/4	...	...	...	2.50	.....
1	3 5/8	2 7/8	4 1/2	3.50	\$9.00
1 1/4	4 1/2	3 3/8	5	5.00	12.25
1 1/2	5 1/8	3 3/4	6	7.00	18.00
2	6 3/8	4 1/8	6 1/2	11.00	24.00
2 1/2	7 7/8	4 11/8	7 1/2	20.00	37.50
3	8 7/8	5 3/8	8 1/4	27.50	57.00

Flanged valves made to order only.

**Walworth Kewanee Regrinding Globe and Angle Check Valves****Union Bonnet—High Duty Metal**For Working Steam Pressures  
(Saturated)

1/4-Inch and Smaller Up to 225 Lbs.  
1/2 to 3-Inch, Inclusive, Up to 200 Lbs.

Tested to 400 Pounds Hydrostatic  
Pressure

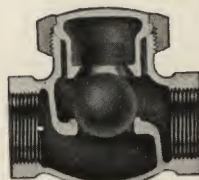


No. 3277

Size Inches	PRICE, EACH 3277, Globe	PRICE, EACH 3278, Angle	Size In.	PRICE, EACH 3277, Globe	PRICE, EACH 3278, Angle
1/8	.....	.....	1 1/4	\$4.50	\$4.50
1/4	\$1.15	\$1.15	1 1/2	6.30	6.30
3/8	1.35	1.35	2	9.90	9.90
1/2	1.70	1.70	2 1/2	18.00	18.00
3/4	2.25	2.25	3	26.00	26.00
1	3.15	3.15	...	.....	.....

**Brass Ball Check Valves****Horizontal**

For 150 Pounds Steam Working Pressure



No. 903

This ball check valve is of good weight and is sufficiently strong to stand the steam working pressure given.

Has union bonnet and malleable iron union ring.

This valve can be furnished with a drip cock at an extra price, if so desired.

Size Inches	Price Each	Size Inches	Price Each
1/2	\$1.60	1	\$3.60
3/4	2.40	1 1/4	5.60

For smaller sizes, see horizontal list. Sizes 1 1/2 and 2-inch made to order.



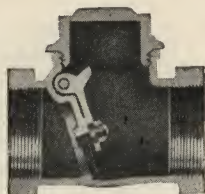
**Brass Swing Check Valves**

With Brass or Leather Disc

For Working Pressures: Brass Disc, 125 Pounds Steam; Leather Disc, 175 Pounds Water

May be used in a horizontal position or for upward flow.

Size In.	SCRD., PRICE, EACH		Size In.	SCRD., PRICE, EACH	
	With Brass Disc	With Leather Disc		With Brass Disc	With Leather Disc
3/8	\$1.80	\$2.40	1 1/2	\$4.75	\$6.00
1/2	2.00	2.65	2	6.75	8.25
3/4	2.25	2.90	2 1/2	15.00	....
1	2.80	3.60	3	24.00	....
1 1/4	3.65	4.65	....	....	....



No. 934

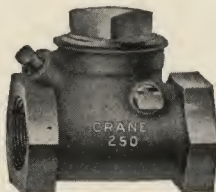
Valves for cold water preferably should have leather discs. For hot water or steam, brass discs should be used. Unless otherwise specified on order, swing check valves will be furnished with brass discs.

**Brass Swing Check Valves**

For Working Pressures: 250 Pounds Saturated Steam  
250 Pounds Superheated Steam with Total Temperature of 500° F.  
Tested to 800 Pounds Hydraulic Pressure

Made of special brass, a high grade steam metal which has been found most desirable for use where conditions require a superior valve metal.

Size Inches	Diam. Flanges Inches	PRICE, EACH	
		No. 74E Screwed	No. 75E Flanged
3/8	...	\$2.70	....
1/2	...	2.70	....
3/4	...	3.25	....
1	4 1/2	4.25	\$13.00
1 1/4	5	6.00	18.00
1 1/2	6	7.50	22.00
2	6 1/2	12.00	37.50
2 1/2	7 1/2	25.00	55.00



No. 74E, Horizontal

**Jenkins Bronze Check Valves**

Horizontal, Vertical and Angle

For 150 Pounds Working Pressure

No. 117, Horizontal  
ScrewedNo. 118, Angle  
ScrewedNo. 119, Vertical  
Screwed

Tightness does not depend on regrinding, for instead of the common metal clapper, these valves contain an accurately guided brass disc holder and a renewable Jenkins Disc.

As regularly furnished, all check valves are fitted with a Jenkins No. 936 Disc which will soften slightly under the action of hot water. When ordered for cold water, air or gases, a slightly softer disc is supplied. The Jenkins Discs are specially compounded and will retain their toughness and resiliency indefinitely. When necessary to repair, valves can be made as good as new at small cost by removing cap and renewing disc.

Size Inches	FACE TO FACE FLANGED, IN.		Center to Face Flanged Inches	Diam. Flanges Inches	PRICE, EACH	
	Horiz.	Vert.			No. 117, Horiz. Screwed	No. 120, Horiz. Flanged
1/8	...	...	...	...	\$1.10	....
1/4	2 1/16	2 7/8	1 1/2	2 1/2	1.10	....
3/8	3	3 1/16	2 1/16	2 1/2	1.20	....
1/2	3 1/16	3 3/16	2 1/4	3 1/2	1.30	\$4.00
3/4	3 5/8	3 13/16	2 1/2	3 7/8	1.90	5.00
1	4	4 3/8	2 3/4	4 1/4	2.60	6.00
1 1/4	4 3/8	4 13/16	2 15/16	4 5/8	3.60	8.00
1 1/2	4 7/8	5 1/2	3 3/16	5	5.00	10.00
2	6	6 1/4	3 3/4	6	7.50	15.00
2 1/2	6 3/4	7 3/8	4 1/4	7	14.00	23.00
3	7 1/2	9 1/16	4 9/16	7 1/2	21.00	32.00

**Jenkins Discs**

Square Hole Disc



Round Hole Disc

Jenkins Discs are made of the finest grade of rubber and other ingredients, compounded and vulcanized with such accuracy as to produce practically a uniform product. The various compounds, each best suited for a particular kind of service, are described below.

It will be noted that there is a Jenkins Disc of rubber composition for practically every condition of service found in the average building or factory.

The Jenkins Composition Disc presents a slightly yielding surface to the valve seat, and is flexible enough to adapt itself to the seat, thus insuring perfect contact.

**Schedule of Principal Compounds and Service for Which Jenkins Discs Are Guaranteed**

No. 30.—A disc for cold water, air and gas up to 10 pounds pressure. For extremely low pressures in check valves on vacuum lines, this disc will be tight on a fraction of an ounce.

No. 15.—A disc for cold water, air and gas 10 to 25 pounds pressure. This disc is recommended for use in check valves only for suction lines to pumps and low pressure systems.

No. 946.—A soft, tough, elastic disc for cold water, air, gas, and oil up to 50 pounds pressure. For check, whistle, safety, Selclo, and rapid action valves, also for globe and angle valves, where but slight effort is required to close them tightly. Also recommended for all classes of cold, wet, and dry vacuum systems. Used exclusively in fire line valves up to 250 pounds.

No. 936.—A tough, resilient disc for cold water, air and gas 50 to 250 pounds pressure, or hot water, not exceeding 200°, up to 50 pounds pressure. For globe and angle, also check and other self-closing valves. This disc is regularly fitted in all Jenkins check valves, both standard and extra heavy.

No. 110.—A tough, semi-hard disc for hot water, not exceeding 250°, up to 250 pounds pressure, or cold water 250 to 400 pounds pressure. This disc is regularly used in Jenkins radiator valves. Recommended for check valves, both standard and extra heavy, when intended for boiler feed lines. For steam pressure up to 25 pounds in globe and angle valves. Used in standard pattern Y valves for boiler blow-offs.

No. 80.—A disc of dark gray composition for steam up to 100 pounds pressure, or hot water not exceeding 300°. Also recommended for hydraulic pressures from 400 to 800 pounds, when used in extra heavy valves. Used in extra heavy Y valves for boiler blow-offs.

No. 119.—A dark red composition disc which is sufficiently resilient in service under steam pressure. For saturated (wet) steam 150 pounds pressure, not exceeding 366°. For globe, angle, cross, Selclo, and safety valves.

No. 1106.—A disc for oil, not exceeding 150°, up to 200 pounds pressure. For globe, angle, and check valves.

**Price List**

Size Inches	PRICE, EACH		Size Inches	Price, Ea. No. 223 Round Hole	Size Inches	Price, Ea. No. 223 Round Hole
	No. 101 Square Hole	No. 223 Round Hole				
1/4	...	\$0.06	3	\$0.80	10	\$4.50
3/8	...	.08	3 1/2	1.00	12	5.00
1/2	...	.08	4	1.20	14	7.00
3/4	\$0.10	.10	4 1/2	1.40	16	8.00
1	.12	.12	5	1.60	18	10.00
1 1/4	.18	.18	6	2.00	20	12.00
1 1/2	.24	.24	7	2.40	22	15.00
2	.36	.36	8	2.80	24	18.00
2 1/2	...	.48	9	3.60	...	...



### No. 3111 Bronze Gate Valves

Rising Stem, Double Disc, Parallel Seats  
For 125 Pounds Steam Working Pressure



Flanged valves are made to order only.

Size In.	Face to Face Flanged Inches	Diam. Flanges Inches	PRICE, EACH	
			Screwed	Flanged
1/4	...	...	\$1.45	.....
3/8	...	...	1.45	.....
1/2	...	...	1.65	.....
3/4	...	...	2.05	.....
1	3 5/16	...	2.80	\$10.25
1 1/4	3 3/4	4 1/2	3.70	12.00
1 1/2	4 1/16	5	5.00	15.00
2	4 5/16	6	7.30	25.00
2 1/2	5 5/8	7	13.00	33.00
3	6	7 1/2	19.00	39.00

### No. 3102 Federal Brass Gate Valves

Non-rising Stem, Wedge Disc with Gland  
For 125 Pounds Steam Working Pressure



Hexagon ends are made heavy to stand the strains due to connecting up. Valve has a gland in stuffing box and can be repacked while under pressure if valve is wide open.

Size In.	Face to Face Flgd., In.	Diam. Flanges In.	PRICE, EACH	
			Screwed	Flanged
3/8	...	...	\$1.45	.....
1/2	2 3/4	3	1.65	\$8.50
3/4	2 5/8	3 1/2	2.05	9.00
1	3 7/16	4	2.80	10.25
1 1/4	3 5/8	4 1/2	3.70	12.00
1 1/2	4 5/16	5	5.00	15.00
2	5 1/4	6	7.30	25.00
2 1/2	5 3/4	7	13.00	33.00
3	7	7 1/2	19.00	39.00

### Walworth Bronze Gate Valves

Non-Rising Stem, Solid Wedge, With Gland



For 250 Pounds Steam Working Pressure

Valve has rolled brass stems, ventilated wheel.

Can be repacked while under pressure when valve is wide open.

Size Inches	Face to Face Inches Flanged	Diameter Flanges Inches	PRICE, EACH	
			No. 3144 Screwed	No. 3145 Flanged
1/2	...	...	\$5.00	.....
3/4	...	...	6.00	.....
1	4 3/16	4 7/8	8.00	\$16.00
1 1/4	4 3/8	5 1/4	11.25	21.50
1 1/2	5 5/16	6 1/8	16.50	30.00
2	6 3/16	6 1/2	23.00	41.00
2 1/2	7 1/8	7 1/2	40.00	65.00
3	8 3/16	8 1/4	65.00	100.00

Flanged valves made to order only.

### No. 720 Jenkins Bronze Rapid Action Valves

Renewable  
Composition  
Disc

Bronze spindle with hardened steel tip, steelyoke, malleable iron lever with cam hardened.

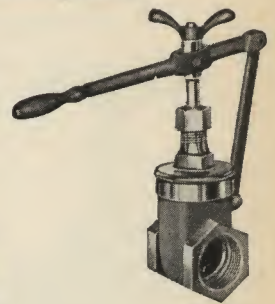
Opens full with one pull of lever and stays open automatically. For laundry service, garages, etc.



Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2	\$7.00	1 1/4	\$12.00	2 1/2	\$28.00
3/4	9.00	1 1/2	15.00	...	.....
1	10.00	2	20.00	...	.....

### Brass Gate Valves

Quick Opening, Double Disc, Parallel Seats  
For 125 Pounds Steam Working Pressure



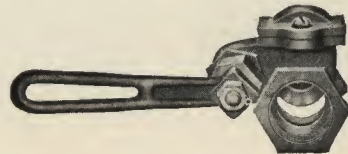
No. 818

This valve is of a heavy pattern. The winged nut at the top of the stem locks the disc at any desired opening.

Size In.	Price Each Screwed	Size In.	Price Each Screwed
3/4	\$3.60	2	\$11.80
1	4.80	2 1/2	20.25
1 1/4	6.20	3	30.00
1 1/2	8.50	...	.....

### No. R8728 Walworth Brass Lever Throttle Valves

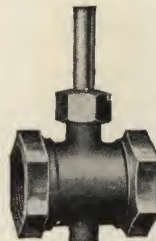
For 100 Pounds Steam Working Pressure



Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/2	\$1.60	1 1/2	\$5.00	3 1/2	\$40.00
3/4	1.80	2	7.50	4	60.00
1	2.50	2 1/2	13.50	...	.....
1 1/4	3.50	3	19.00	...	.....

### Brass Butterfly Valves

For 125 Pounds Steam Working Pressure



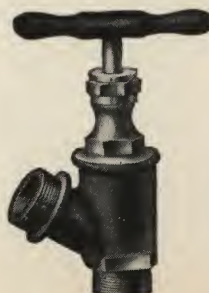
No. 822

These valves are not intended to be steam tight.

Size Inches	Price Each	Size Inches	Price Each
3/4	\$3.10	2	\$10.00
1	4.40	2 1/2	13.75
1 1/4	5.65	3	21.00
1 1/2	6.75	...	.....

Always specify brass butterfly valves if brass is required, otherwise sizes 2 inch and larger will be furnished in iron body.

### Chicago Pattern Brass Hose Valves



No. 820

Furnished with rough body, tee handles and leather discs, in either hose or iron pipe thread on hose end and iron pipe thread on lower end invariably. The 2 1/2-inch size only can also be had with any fire department thread in hose end.

Valves with wheel handles or with soft rubber discs at slight additional charge. Valves nickel-plated at extra charge.

With wheel handle, 50 cents extra.

Size Inches	Price Each	Size Inches	Price Each
1x1	\$3.15	2x2	\$7.00
1 1/4x1 1/4	3.70	2 1/2x2 1/2	8.00
1 1/2x1 1/2	4.75	...	.....



## Walworth Iron Body Globe and Angle Valves

Brass Disc, Brass Trimmings

For 125 Pounds Steam Working Pressure

No. 2201, Globe  
ScrewedNo. 2205, Angle  
Flanged

Sizes 2½-inch and larger have bridge in seat ring and guide pin on disc. Renewable brass ring under packing in stuffing box. Brass stems.

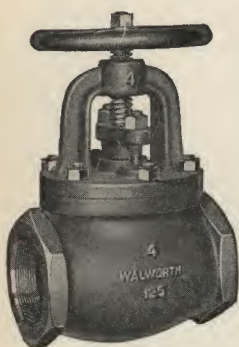
Can be repacked while under pressure if valve is wide open.

Size In.	FACE TO FACE INCHES		CENTER TO FACE INCHES		Diam. Flanges In.	PRICE, EACH	
	Serd.	Flgd.	Serd.	Flgd.		No. 2201 Globe Screwed	No. 2205 Angle Flanged
2	6½	8	3¼	4	6	\$5.40	\$7.00
2½	7	8½	3½	4½	7	7.35	9.00
3	8	9½	4	4¾	7½	9.80	12.50

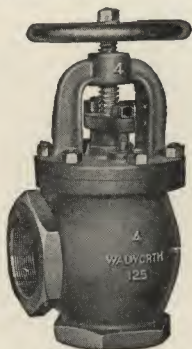
## Walworth Iron Body Globe and Angle Valves

Brass Trimmings

For 125 Pounds Working Steam Pressure



No. 2207 Globe, Screwed



No. 2208, Angle, Screwed

Disks, 4-inch and smaller, all brass; larger, iron and brass. Can be repacked while under pressure if valve is wide open.

Size Inches	FACE TO FACE INCHES		CENTER TO FACE INCHES		Diam. In.	PRICE, EACH	
	Serd.	Flgd.	Serd.	Flgd.		No. 2207 Globe Flgs. Screwed	No. 2209 Globe Angle Flanged
2	6½	8	3¼	4	6	\$7.00	\$8.60
2½	7	8½	3½	4½	7	9.00	10.75
3	8	9½	4	4¾	7½	12.50	15.00
3½	9	10½	4½	5¼	8½	15.25	18.50
4	10	11½	5	5¾	9	19.00	22.50
5	11¼	13	5⅝	6½	10	27.00	31.00
6	13	14	6½	7	11	37.50	42.00
8	16	17	8	8½	13½	72.00	77.00
10	19¼	20	9⅝	10	16	114.00	123.00
12	22¼	24	11⅝	12	19	170.00	187.00

## Walworth Jenkins Type Iron Body Globe and Angle Valves

Brass Trimmings—With Yoke

For 125 Pounds Steam Working Pressure

No. 2213, Globe  
ScrewedNo. 2215, Globe  
Flanged

Size In.	FACE TO FACE INCHES		CENTER TO FACE INCHES		Diam. Flanges In.	PRICE, EACH	
	Serd.	Flgd.	Serd.	Flgd.		No. A3601 Globe Screwed	No. A3611 Globe Angle Flanged
2½	7	8½	3½	4½	7	\$12.00	\$14.00
3	8	9½	4	4¾	7½	16.75	18.50
3½	9	10½	4½	5¼	8½	19.50	21.50
4	10	11½	5	5¾	9	24.00	26.00
5	11¼	13	5⅝	6½	10	40.00	42.00
6	13	14	6½	7	11	48.00	50.00
8	....	17	....	8½	13½	....	90.00

## Walworth Iron Body Globe and Angle Valves

Brass Trimmings

For 175 Pounds Steam Working Pressure



Globe, Screwed



Angle, Screwed

Size Inches	PRICE, EACH	
	Globe and Angle Screwed	Globe and Angle Flanged
2	\$13.00	\$15.00
2½	16.00	18.00
3	20.00	23.00
3½	24.00	28.00
4	28.00	33.00

Size Inches	PRICE, EACH	
	Globe and Angle Screwed	Globe and Angle Flanged
5	\$42.00	\$47.00
6	50.00	55.00
8	90.00	95.00
10	135.00	145.00
12	....	200.00





No. 2229, Globe, Screwed

### Walworth Steeliron Body Globe and Angle Valves

#### Brass Trimmings

For 250 Pounds Steam Working Pressure

Discs 4 inches and smaller are of bronze, 5 inches and larger, of steeliron with bronze inserted rings. Stems all sizes are steel, nickel-plated. Bonnet flanges on valves 4 inches and smaller have stud bolts. All sizes 5 inches and larger have through bolts.

Can be repacked under pressure if valve is wide open.

Size In.	FACE TO FACE, IN.		CENTER TO FACE, IN.		Diam. Flgs. In.	Size By- pass In.	PRICE, EACH	
	Screw.	Flgd.	Screw.	Flgd.			No. 2229 Globe Screwed	No. 2231 Globe Angle Flanged
2	9 1/2	10 1/2	4 3/4	5 1/4	6 1/2	...	\$26.00	\$27.50
2 1/2	10 3/8	11 1/2	5 5/8	5 3/4	7 1/2	...	33.00	35.00
3	11 3/4	12 1/2	5 7/8	6 1/4	8 1/4	...	37.00	40.00
3 1/2	12 1/4	13 1/4	6 1/8	6 5/8	9	...	42.00	45.00
4	13	14	6 1/2	7	10	...	46.00	50.00
5	14 7/8	15 3/4	7 7/8	7 7/8	11	...	61.00	65.00
6	17 1/2	17 1/2	8 1/4	8 3/4	12 1/2	...	75.00	80.00
8	21	21	10	10 1/2	15	1 1/2	114.00	120.00
10	24 1/2	24 1/2	12 1/4	12 1/4	17 1/2	2	200.00	200.00
12	28	28	14	14	20 1/2	2	300.00	300.00

### Jenkins Iron Body Globe and Angle Valves With Yoke, Composition Mounted

For Working Pressures: 250 Pounds Steam; 400 Pounds Water



No. 162A Globe, Screwed

Bodies, yokes and disc holders are made of high grade cast iron; spindles, of manganese bronze. The discs and seat rings can be reground or renewed. Made for maximum strength and rigidity. Will withstand strains due to expansion, contraction of piping, etc.



No. 163A Angle, Screwed

Size In.	FACE TO FACE INCHES		CENTER TO FACE INCHES		Diam. Flanges In.	PRICE, EACH	
	Screwed	Flanged	Screwed	Flanged		No. 162A Globe Screwed	No. 163 Angle Flanged
2	7 3/4	9 1/4	3 7/8	4 5/8	6 1/2	\$26.00	\$29.00
2 1/2	9	10 3/4	4 1/2	5 3/8	7 1/2	31.00	34.00
3	10 1/4	11 3/4	5 1/8	5 7/8	8 1/4	39.00	42.00
3 1/2	11 1/2	12 1/2	5 3/4	6 1/4	9	45.00	48.00
4	12 3/4	13 3/4	6 3/8	6 7/8	10	61.00	64.00
4 1/2	14	14 1/2	7	7 1/4	10 1/2	70.00	73.00
5	15	15 1/2	7 1/2	7 3/4	11	84.00	88.00
6	17	17	8 1/2	8 1/2	12 1/2	111.00	116.00
7	18	18 1/2	9	9 1/4	14	159.00	159.00
8	19 1/2	20	9 3/4	10	15	175.00	175.00
9	21	21 1/4	10 1/2	10 5/8	16 1/4	262.00	262.00
10	23	23	11 1/2	11 1/2	17 1/2	286.00	286.00
12	26	26	13	13	20 1/2	365.00	365.00

### Series 300 Walworth Sigma Steel Globe, Angle and Check Valves

300 Pounds Working Pressure at 750° F. Steam, Hot Oil and Vapor

400 Pounds Working Pressure at 450° F. Boiler Feed

275 Pounds Working Pressure at 900° Hot Oil and Vapor

225 Pounds Working Pressure at 1000° F. Hot Oil and Vapor

500 Pounds Non-Shock Working Pressure, Cold Air, Water and Gas

750 Pounds Hydrostatic Pressure Test

Globe Valve  
FlangedSwing Check Valve  
Flanged

Walworth Sigma Steel Valves afford longer life in service and offer resistance to corrosion and erosion.

#### Dimensions, Inches

Size Inches	CENTER TO FACE INCHES		Diameter Flanges Inches	Thickness Flanges Inches
	Flanged	Screwed		
2	5 1/4	4 3/4	6 1/2	7/8
2 1/2	5 3/4	5 3/8	7 1/2	1
3	6 1/4	5 7/8	8 1/4	1 1/8
4	7	6 1/2	10	1 1/4
5	7 7/8	7 1/2	11	1 3/8
6	8 3/4	8 1/4	12 1/2	1 7/16
8	10 1/2	10	15	1 5/8
10	12 1/4	11 3/8	17 1/2	1 7/8
12	14	...	20 1/2	2

Valves ordered drilled will be drilled to the American 250-pound standard.

Valves will be shipped with 1/16-inch raised face only, unless otherwise specified.

Flange details same as American Standard for 250 pounds working steam pressure.

#### Price, Each—All Classes

Size Inches	GLOBE AND ANGLE			Swing Check Flanged
	Flanged	Flanged with By-Pass	Screwed	
2	\$57.50	.....	\$54.00	\$45.00
2 1/2	70.00	.....	66.00	55.00
3	85.00	.....	81.00	62.50
4	115.00	.....	110.00	85.00
5	145.00	.....	.....	100.00
6	170.00	\$225.00	.....	123.00
8	245.00	300.00	.....	177.00
10	375.00	440.00	.....	275.00
12	475.00	560.00	.....	325.00

#### Drilling and Spot Facing

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Globe	Angle		Globe	Angle
2	\$3.00	\$3.50	6	\$6.00	\$7.00
2 1/2	3.25	3.75	8	8.00	9.00
3	3.75	4.25	10	10.00	11.00
4	4.50	5.00	12	12.00	13.50
5	5.00	5.50	..	.....	.....



## Walworth Iron Body Globe Check Valves

Brass Trimmings

For 125 Pounds Steam Working Pressure



No. 2217, Screwed



No. 2218, Flanged

Size In.	FACE TO FACE INCHES		Diam. Flanges In.	PRICE, EACH	
	Screwed	Flanged		No. 2217 Screwed	No. 2218 Flanged
*2	6 1/2	.....	.....	\$3.60	.....
*2 1/2	7	.....	.....	6.50	.....
*3	8	9 1/2	7 1/2	8.90	\$11.50
3 1/2	9	10 1/2	8 1/2	12.25	15.50
4	10	11 1/2	9	14.25	18.00
5	11 1/4	13	10	22.00	26.00
6	13	14	11	30.00	35.00
8	.....	17	13 1/2	.....	62.00
10	.....	20	16	.....	115.00
12	.....	24	19	.....	175.00

\*No. 2217 sizes 3 inch and smaller furnished with brass cap. Larger sizes have bolted cover.

## Walworth Iron Body Swing Check Valves

Bolted Cover, Brass Mounted

For 125 Pounds Steam Working Pressure



No. 2219, Screwed



No. 2221, Flanged

Size In.	FACE TO FACE INCHES		Diam. Flanges	PRICE, EACH			
	Sord.	Flgd.		WITH BRASS No. 2219 Screwed	FACED DISC No. 2221 Flanged	ADD FOR LEATHER DISC	No. 2223 Hub End with Leather Disc
2	5 3/4	8	6	\$11.00	\$13.00	\$1.00	\$14.25
2 1/2	7 1/8	8 1/2	7	12.00	14.50	1.50	.....
3	8	9 1/2	7 1/2	13.50	17.00	2.00	19.00
3 1/2	8 3/4	10 1/2	8 1/2	17.50	21.00	2.50	.....
4	9 3/8	11 1/2	9	20.00	24.00	3.00	27.00
5	11 1/4	13	10	30.00	34.00	4.00	.....
6	12 1/2	14	11	36.00	41.00	4.00	45.00
8	16	17	13 1/2	70.00	75.00	7.50	82.50
10	19 1/4	20	16	110.00	115.00	10.00	125.00
12	22 1/4	24	19	160.00	168.00	12.00	185.00
14	.....	.....	21	.....	340.00	.....	340.00
16	.....	.....	23 1/2	.....	450.00	.....	450.00
18	.....	.....	25	.....	600.00	.....	600.00
20	.....	.....	27 1/2	.....	700.00	.....	700.00
24	.....	.....	32	.....	1000.00	.....	1000.00

## Clearway Iron Body Swing Check Valves

Underwriters' Pattern  
Brass TrimmingsFor 150 Pounds Water Working Pressure  
Tested to 300 Pounds Hydraulic Pressure per Square Inch

Furnished with brass faced or leather faced disc as specified. Unless otherwise specified, brass faced discs will be furnished.

These valves are provided with bosses that may be tapped for by-pass when desired.

Size Inches	EACH		Add for Leather Disc Each	FACE TO FACE INCHES		Diameter Flanges Inches
	No. 374 1/2 Screwed	No. 375 Flanged		Screwed	Flanged	
2 1/2	\$14.50	\$14.50	\$1.50	10	10	7
3	17.00	17.00	2.00	11	11	7 1/2
4	24.00	24.00	3.00	13	13	9
5	34.00	34.00	4.00	15	15	10
6	41.00	41.00	4.00	16	16	11
8	75.00	75.00	7.50	18	18	13 1/2
10	.....	115.00	10.00	..	22	16
12	.....	168.00	12.00	..	26	16

## Jenkins Iron Body Check Valves

Horizontal, Angle and Vertical

For 150 Pounds Working Pressure



No. 151, Horizontal, Screwed



No. 152, Angle, Screwed

Size In.	FACE TO FACE INCHES		CENTER TO FACE INCHES		PRICE, EACH		
	Screwed	Flanged	Screwed	Flanged	No. 151, Horiz. No. 152, Angle No. 153A, Angle No. 152A, Vert. No. 153B, Vert.	Screwed	Flanged
2	6 1/2	7 1/8	3 1/2	3 7/8	6	\$10.00	\$12.50
2 1/2	7 3/4	8	3 7/8	4 1/2	7	13.75	16.25
3	9 3/8	9 1/4	4 1/16	4 9/8	7 1/2	17.50	20.75
3 1/2	10	11	5	5 5/8	8 1/2	21.25	25.00
4	12	11 3/4	6	5 7/8	9	25.00	28.75
4 1/2	12 5/8	12 1/2	6 5/16	6 1/4	9 1/4	31.25	35.00
5	13 1/4	13 1/8	6 3/8	6 1/2	10	37.50	41.25
6	16	16	8	8	11	50.00	54.00
7	16 1/2	16 1/4	8 1/4	8	12 1/2	81.00	81.00
8	18 3/4	18 1/2	9 3/8	9 1/4	13 1/2	100.00	100.00

The Jobber is using his years of experience in selecting and stocking the supplies you need.

*Patronize your Jobber*





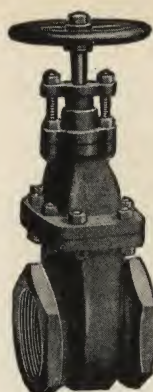
### Walworth Kewanee Pattern Iron Body Gate Valves

Non-Rising Stem—Brass  
Trimmings, Wedge Gate

For 125 Pounds Steam Working Pressure

Can be repacked while under pressure if valve is wide open. Valves are shipped faced only unless otherwise ordered. All-iron gate valves furnished at same prices.

No. 2105, Screwed



### Iron Body Gate Valves

Non-rising Stem, Hard Metal Seat,  
Wedge Disc

For Working Pressures: Steam, 16-inch and  
Smaller, 175 Pounds; 18-inch, 150 Pounds;  
Water, 12-inch and Smaller, 250  
Pounds; 14-inch and Larger,  
200 Pounds

No. 853  
Screwed

Size In.	FACE TO FACE INCHES		Diam. Flanges In.	PRICE, EACH	
	Screwed	Flanged		No. 2105 Screwed	No. 2106 Flanged
2	5 1/2	7	6	\$10.00	\$12.00
2 1/2	5 7/8	7 1/2	7	11.50	13.50
3	6 1/8	8	7 1/2	14.00	16.50
3 1/2	6 1/2	8 1/2	8 1/2	17.00	19.50
4	6 7/8	9	9	19.00	23.00
5	7 5/8	10	10	27.50	31.50
6	7 3/4	10 1/2	11	32.50	36.50
8	8 7/8	11 1/2	13 1/2	54.00	58.00
10	10 1/4	13	16	90.00	95.00
12	11 5/8	14	19	125.00	133.00
14	....	15	21	....	181.00
16	....	16	23 1/2	....	260.00
18	....	17	25	....	350.00
20	....	18	27 1/2	....	425.00
24	....	20	32	....	600.00

Size In.	FACE TO FACE INCHES		Diam. Flanges In.	PRICE, EACH		
	Screwed	Flanged		Screwed	Flanged	Flanged with By-pass
2	5 1/2	7 1/2	6 1/2	\$15.00	\$17.50	....
2 1/2	6	8	7 1/2	17.00	19.50	....
3	7 1/4	9 1/2	8 1/4	20.00	23.00	....
3 1/2	7 1/2	10	9	25.00	28.00	....
4	7 3/4	10 1/2	10	28.00	33.00	....
4 1/2	8 1/4	11	10 1/2	35.00	40.00	....
5	8 1/2	11 1/2	11	40.00	45.00	....
6	8 3/4	12	12 1/2	50.00	57.00	\$85.00
7	9 1/4	12 1/2	14	75.00	82.00	110.00
8	10	13 1/2	15	87.00	94.00	125.00
9	10 3/4	14	16 1/4	120.00	127.00	158.00
10	11 1/2	15	17 1/2	145.00	153.00	185.00
12	12 1/2	16	20 1/2	185.00	195.00	230.00
14	....	18	23	....	300.00	340.00
15	....	18 3/4	24 1/2	....	350.00	390.00
16	....	19 1/2	25 1/2	....	400.00	450.00
18	....	21	28	....	....	575.00



### Walworth Kewanee Pattern Iron Body Gate Valves

Rising Stem  
Wedge Gate  
Brass Trimmings

For 125 Pounds Steam Working Pressure

Bonnet flanges have through bolts.

Valves, when used for water, should not be installed for pressures in excess of 50 per cent more than their steam rating.

Valves can be repacked while under pressure if wide open.

No. 2117, Screwed

Size Inches	FACE TO FACE INCHES		Diam. Flanges Inches	PRICE, EACH			
	Screwed	Flanged		SCREWED No. 2117 Steel Stem	FLANGED No. 2118 Brass Stem	SCREWED No. 2119 Steel Stem	FLANGED No. 2120 Brass Stem
2	5 1/2	7	6	\$17.50	\$19.00	\$19.50	\$21.00
2 1/2	5 7/8	7 1/2	7	19.00	20.50	21.00	22.50
3	6 1/8	8	7 1/2	22.00	23.50	24.50	26.00
3 1/2	6 1/2	8 1/2	8 1/2	25.00	27.00	27.50	29.50
4	6 7/8	9	9	30.00	32.50	34.00	36.50
5	7 5/8	10	10	42.00	45.00	46.00	49.00
6	7 3/4	10 1/2	11	48.00	52.00	52.00	56.00
8	8 7/8	11 1/2	13 1/2	80.00	86.00	84.00	90.00
10	10 1/4	13	16	122.00	131.00	127.00	136.00
12	11 5/8	14	19	160.00	172.00	168.00	180.00
14	....	15	21	....	....	236.00	255.00
16	....	16	23 1/2	....	....	325.00	350.00
18	....	17	25	....	....	435.00	470.00
20	....	18	27 1/2	....	....	525.00	565.00
24	....	20	32	....	....	725.00	775.00

### Iron Body Gate Valves

Outside Screw and Yoke, Hard Metal Seats, Wedge Disc

For Working Pressures: Steam, 16-inch and Smaller, 175 Pounds;  
18-inch and Larger, 150 Pounds; Water, 12-inch and  
Smaller, 250 Pounds; 14-inch and Larger, 200 Pounds

Size In.	FACE TO FACE INCHES		Diam. Flanges In.	PRICE, EACH	
	Screwed	Flanged		Screwed	Flanged
2	5 1/2	7 1/2	6 1/2	\$23.00	\$25.00
2 1/2	6	8	7 1/2	25.00	27.50
3	7 1/4	9 1/2	8 1/4	29.00	32.00
3 1/2	7 1/2	10	9	35.00	38.00
4	7 3/4	10 1/2	10	40.00	45.00
4 1/2	8 1/4	11	10 1/2	50.00	55.00
5	8 1/2	11 1/2	11	54.00	59.00
6	8 3/4	12	12 1/2	65.00	72.00
7	9 1/4	12 1/2	14	90.00	97.00
8	10	13 1/2	15	110.00	117.00
9	10 3/4	14	16 1/4	145.00	152.00
10	11 1/2	15	17 1/2	170.00	178.00
12	12 1/2	16	20 1/2	215.00	225.00
14	....	18	23	....	340.00
15	....	18 3/4	24 1/2	....	400.00
16	....	19 1/2	25 1/2	....	450.00
18	....	21	28	....	600.00
20	....	22 1/2	30 1/2	....	775.00
24	....	25 1/2	36	....	1175.00

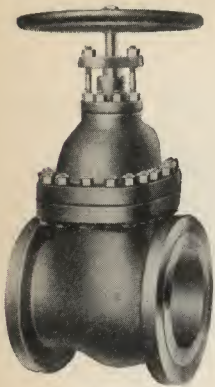


No. 854  
Flanged

### With By-pass

Size In.	Flanged Price Each	Size In.	Flanged Price Each	Size In.	Flanged Price Each
6	\$100.00	10	\$210.00	16	\$510.00
7	125.00	12	260.00	18	660.00
8	148.00	14	390.00	20	850.00
9	183.00	15	450.00	24	1250.00





No. 3E, Flanged

### Ferrostee Body Gate Valves

Non-Rising Stem, Hard Metal Seat, Wedge Disc

For 250 Pounds Saturated or Superheated Steam Working Pressure; 500° F. Total Temperature  
For Water Working Pressures: 1½ to 8-Inch, 400 Pounds; 9 to 12-Inch, 350 Pounds; 14 to 16-Inch, 300 Pounds

Valves 6-inch and larger are recommended with by-pass. On installations larger than 6 inches, ⅞ flanged valves are desirable.

Prices given are for valves without by-pass; by-pass furnished at an extra charge.

Size Inches	End to End Inches Screwed	Face to Face Inches Flanged	Diameter Flanges Inches	PRICE, EACH	
				No. 2E Screwed	No. 3E Flanged
1¼	5½	6½	5	\$24.00	\$26.50
1½	6¼	7½	6	25.00	27.50
2	7	8½	6½	27.50	30.00
2½	8	9½	7½	33.00	35.50
3	9	11½	8½	45.00	48.00
3½	10	11½	9	57.00	60.00
4	11	12	10	60.00	65.00
4½	12¼	13¼	10½	77.00	82.00
5	13½	15	11	85.00	90.00
6	15½	15½	12½	100.00	107.00
7	16¼	16¼	14	125.00	132.00
8	16½	16½	15	155.00	162.00
9	17	17	16¼	225.00	232.00
10	18	18	17½	250.00	258.00
12	....	19¾	20½	....	335.00
14	....	22½	23	....	440.00
15	....	22½	24½	....	540.00
16	....	24	25½	....	675.00

### Walworth Steeliron Gate Valves

Rising Stem, Wedge Disc, Brass Trimmings  
For 250 Pounds Steam Working Pressure  
400 Pounds, Oil, Water and Gas

Size In.	FACE TO FACE, INCHES		Diam. Flanges In.
	Serd.	Flgd.	
2	7	8½	6½
2½	8	9½	7½
3	9	11½	8½
3½	10	11½	9
4	11	12	10
5	13½	15	11
6	14¾	15½	12½
8	16½	16½	15
10	18	18	17½
12	19¾	19¾	20½
14	..	22½	23
16	..	24	25½

Size In.	PRICE, EACH		Size In.	PRICE, EACH	
	No. 2167 Screwed	No. 2168 Flanged		No. 2167 Screwed	No. 2168 Flanged
2	\$35.50	\$38.00	2	\$35.50	\$41.00
2½	41.00	44.50	2½	41.00	47.00
3	54.00	58.00	3	54.00	61.00
3½	67.00	72.00	3½	67.00	75.00
4	72.00	78.00	4	72.00	83.00
5	100.00	108.00	5	100.00	113.00
6	115.00	124.00	6	115.00	131.00
8	180.00	194.00	8	180.00	201.00
10	275.00	297.00	10	275.00	305.00
12	380.00	410.00	12	380.00	420.00
14	....	....	14	....	510.00
16	....	....	16	....	800.00



Screwed

### No. 2169, with By-Pass

Size In.	By-Pass In.	Face to Face In.	Diam. Flgs. In.	Price Each Steel Stem	Size In.	By-Pass In.	Face to Face In.	Diam. Flgs. In.	Price Each Steel Stem
6	1¼	15½	12½	\$170.00	16	3	24	25½	\$825.00
8	1½	16½	15	240.00	18	3	26	28	1050.00
10	1½	18	17½	335.00	20	4	28	30½	1250.00
12	2	19¾	20½	455.00	24	4	31	36	1700.00
14	2	22½	23	580.00	..	..	..	..	.....



### No. 476-F Iron Body Gate Valves

With Saddle Solid Edge Disc Rising Spindle

For 125 Pounds Steam Working Pressure

Size In.	End to End In.	BLACK OR RED JAPANNED		Size In.	End to End In.	BLACK OR RED JAPANNED	
		BRASS MOUNTED	ALL IRON			BRASS MOUNTED	ALL IRON
Serd. Each	Flgd. Each	Serd. Each	Flgd. Each	Serd. Each	Flgd. Each	Serd. Each	Flgd. Each
1½	2½	\$2.00	....	1½	2½	\$2.00	....
¾	2½	2.35	....	¾	2½	2.35	....
1	2¾	2.50	\$3.00	1	2¾	2.50	\$3.00
1¼	3	3.50	4.90	1¼	3	3.50	4.90
1½	3¾	5.00	6.00	1½	3¾	5.00	6.00
2	4	7.50	8.50	2	4	7.50	8.50
2½	4½	12.00	13.50	2½	4½	12.00	13.50
3	5	15.00	16.90	3	5	15.00	16.90
4	6¼	22.00	25.00	4	6¼	22.00	25.00

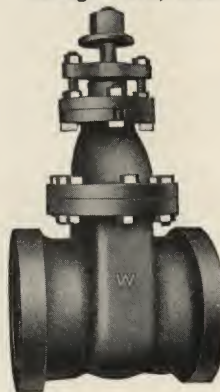
Specify style and finish desired.

### No. 2149 Iron Body Hub End, Gate Valves

Wedge Disc, Non-Rising Stem, Bronze Mounted

For 175 Pounds Working Pressure

To repack while under pressure, valve must be wide open.



Size In.	Each	I. D. Hub, In.
2	\$10.00	3¾
3	14.00	4¾
4	19.00	5¾
5	27.50	6¾
6	32.50	7¾
8	54.00	10¾
10	90.00	12¾
12	125.00	14¾
14	173.00	16¾
16	250.00	18¾
18	340.00	20¾
20	415.00	23¾
24	590.00	27¾

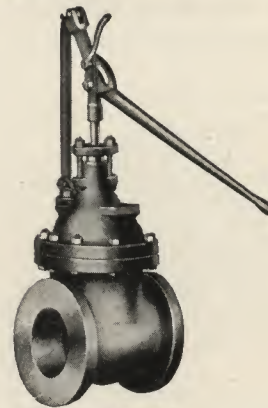
### Iron Body Gate Valves

Quick Opening, Sliding Stem, Brass Trimmings—Wedge Gate

For 125 Pounds Steam Working Pressure

Valve may be repacked while under pressure.

Guides on the disc and ribs in the body are finished and fitted to insure true and easy movement of disc and prevent wear of the faces; and also prevent the disc from touching the seat of valve except at a point of closing.



No. 852, Flanged

Size In.	FACE TO FACE INCHES		Diam. Flanges In.	PRICE, EACH	
	Screwed	Flanged		Screwed	Flanged
2	5½	7	6	\$17.50	\$19.50
2½	5½	7½	7	19.00	21.00
3	6½	8	7½	22.00	24.50
3½	6½	8½	8½	25.00	27.50
4	6½	9	9	30.00	34.00
4½	7½	9½	9½	37.00	41.00
5	7½	10	10	42.00	46.00
6	7¾	10½	11	48.00	52.00
7	8¼	11	12½	64.00	68.00
8	8¾	11½	13½	80.00	84.00
9	9¼	12	15	105.00	110.00
10	9¾	13	16	122.00	127.00
12	11½	14	19	160.00	168.00
14	....	15	21	....	236.00
15	....	15	22¼	....	285.00
16	....	16	23½	....	325.00



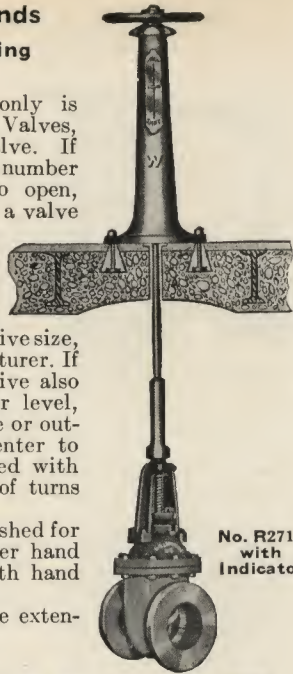
**Walworth Floor Stands****For Rising or Non-Rising Stem Valves**

When plain floor stand only is wanted for use with Walworth Valves, give number and size of valve. If required with indicator, give number of turns to right or left to open, provided it is to be used with a valve not Walworth make. If extension stem also is required, give distance from center to floor. When plain floor stand only is wanted, for use with other than Walworth Valves, give size, number, and name of manufacturer. If extension stem is required, give also distance from center to floor level, diameter hand wheel, if inside or outside screw, distance from center to top of hand wheel. If wanted with indicator, give also number of turns to right or left to open.

The 32-inch stands are furnished for valves having 9-inch or larger hand wheel; 20-inch for valves with hand wheel less than 9 inches.

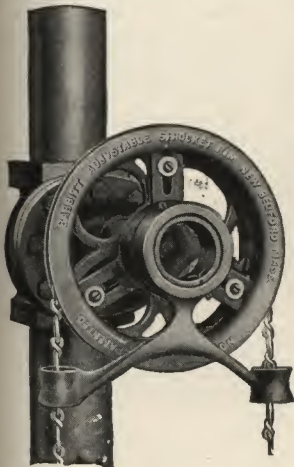
Prices below do not include extension stem.

\*Wheel stem coupling.



No. R2718  
with  
Indicator

Description	No. R2717 Without Indicator		No. R2718 With Indicator	
	20" High	32" High	20" High	32" High
Painted Column; Japan- ned Wheel.....each	\$15.00	\$20.00	\$22.00	\$27.00
Finished Column; Japan- ned Wheel.....each	28.00	35.00	35.00	42.00
Finished Column; Rim and Hub of Wheel Finished; Spokes Japanned...each	40.00	48.00	47.00	55.00

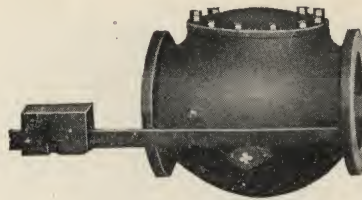
**Babbitt Adjustable Sprocket Rims****With Chain Guides**

Every valve in an overhead pipe line should be equipped for immediate operation from the floor. The Babbitt Adjustable Sprocket Rim and Chain Guide gives this instantaneous control by simply pulling the chain.

The rim is adjustable and may be quickly attached to any type of valve wheel whether used for controlling the flow of steam, gas, water, or other liquids, and does not interfere with the rising stem.

When ordering give diameter of valve wheel to be fitted and number of feet of chain required.

No.	Diameter Sprocket Wheel Inches	Will Fit Valve Wheels Diameter Inches	Price Each	Price Chain per Foot
0	4	2 to 4	\$2.40	\$.08
1	5 7/8	4 1/8 to 5 7/8	4.00	.10
1 1/2	7 1/2	6 to 7 1/2	5.20	.10
2	9	7 3/4 to 9	6.40	.10
2 1/2	12 1/2	9 3/4 to 12 1/2	8.80	.16
3	15 1/2	12 3/4 to 15 1/2	10.80	.16
3 1/2	19	15 3/4 to 19	15.20	.16
4	22	19 1/4 to 22	20.00	.24
4 1/2	26	22 1/4 to 26	28.00	.24
5	30	26 1/4 to 30	32.00	.24

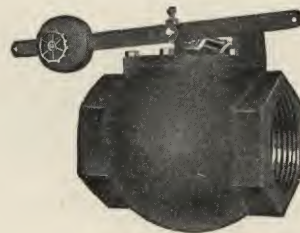
**Iron Body Back Pressure Valves****Horizontal and Vertical**

No. 385, Horizontal, Flanged

Weighted for back pressure up to 5 pounds.

Can be placed in either horizontal or vertical position by changing the position of lever and weight.

Size In.	Face to Face Flanged In.	Diam. Flanged In.	PRICE, EACH	
			Screwed	Flanged
2	....	....	\$11.00	....
2 1/2	....	....	13.00	....
3	....	....	15.00	....
3 1/2	....	....	19.00	....
4	....	....	22.50	....
5	13	10	33.50	\$37.00
6	14	11	43.00	47.00
7	16	12 1/2	70.00	75.00
8	19 1/2	13 1/2	85.00	90.00
10	24 1/2	16	....	130.00
12	27 1/2	19	....	200.00

**Iron Body Noiseless Back Pressure Valves****Horizontal and Vertical**

Horizontal, Screwed

Piston type; for non-condensing engines only.

This valve can be placed in either horizontal or vertical position by changing the position of lever and weight.

It has a single disc equal to the full area of the pipe and is provided with a balancing disc to eliminate excessive weighting.

Size In.	FACE TO FACE, INCHES		PRICE, EACH	
	Screwed	Flanged	Screwed	Flanged
2	6 5/8	7 5/8	\$38.00	\$45.00
2 1/2	7 7/8	8 1/2	45.00	52.00
3	9	10 3/16	53.00	60.00
3 1/2	9 3/4	10 5/8	60.00	67.00
4	10 5/8	11 1/4	68.00	75.00
5	12 1/8	13 3/8	90.00	97.00
6	13 1/8	14 1/8	128.00	135.00
7	14 1/2	15 1/2	155.00	165.00
8	16 1/8	16 1/2	200.00	210.00
10	....	20 1/8	....	270.00
12	....	24 1/4	....	330.00
14	....	26 3/8	....	520.00
16	....	28 1/8	....	700.00
18	....	31 1/4	....	900.00
20	....	33 1/4	....	1125.00
22	....	44 1/4	....	1350.00
24	....	44 3/4	....	1575.00

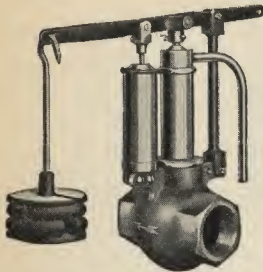
**Pressures**

Size In.	PRESSURE RANGE, LBS.		Size In.	PRESSURE RANGE, LBS.	
	Vertical	Horizontal		Vertical	Horizontal
2, 2 1/2	4 to 25	1 to 25	10 to 12	2 to 6	1 to 8
3 to 4	3 to 15	1 to 15	14 to 24	3 to 6	2 to 8
5 to 8	2 to 10	1 to 10	....	....	....

When desired for other ranges, the positions and pressures must be specified. An extra charge will be made for ranges other than those listed above.



### No. 1 Klipfel Pressure Regulators Piston Type



Screwed Ends

The No. 1 Pressure Regulating Valve is designed to reduce automatically any boiler or initial steam pressure and to maintain the reduced pressure constantly at any desired point above two pounds. For pressures below or slightly above atmosphere Nos. 3 or 4 Diaphragm Type Pressure Regulating Valves should be used. The No. 1 can also be used for the control of air or water.

Sudden changes in the demand for steam do not affect operation objectionably as the oil dash pot entirely overcomes any tendency of the valve to vibrate or chatter. As the lever and the inner valve are directly connected, it is easy to judge the position of the inside valve by looking at the lever. The lever may also be used to open, close, or test by hand.

Excessive weighting on lever is entirely avoided by supplying cylinders and pistons in three sizes for low, medium, and high pressures. If desired reduced pressure is not stated, cylinder and piston suitable for the medium reduced pressure range of three to fifty pounds will be furnished.

Screwed end valves are suitable for inlet pressures up to 150 pounds, unless especially made for higher pressures. Standard flanged valves are suitable for inlet pressures up to 125 pounds (steam), the A.S.M.E. recommendation for standard flanges. Extra heavy flanged valves are suitable for inlet pressures up to 250 pounds.

Sizes 1½ inches and under are made with bronze bodies, screwed ends only. Sizes 2 to 6 inches inclusive, are made with iron bodies, either screwed or flanged ends, but screwed ends will be shipped if not ordered flanged. Sizes 7 inches and larger are made with iron bodies, flanged ends only. All sizes include bronze inner valves and trimmings.

When ordering, state valve number, pipe size, style of ends, both initial and desired reduced pressures, nature of apparatus on which valve is to be used and whether for the control of steam, air or water.

Flanged valves will be furnished suitable for 125 pounds inlet pressure, unless specified extra heavy, in which case both flanges will be made extra heavy, unless specially ordered extra heavy inlet and standard outlet flanges. Both standard and extra heavy valves are shipped faced and drilled at no additional charge. Cast steel valves for superheated steam, prices upon application.

Size In.	FACE TO FACE, IN.			PRICE, EACH		
	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.
3/8-1/2	3 7/8	....	....	\$45.00	....	....
3/4	3 7/8	....	....	45.00	....	....
1	4 1/8	....	....	50.00	....	....
1 1/4	4 1/4	....	....	55.00	....	....
1 1/2	4 7/8	....	....	60.00	....	....
2	6 7/8	7 1/2	8	70.00	\$75.00	\$80.00
2 1/2	8	9	9 5/8	85.00	90.00	95.00
3	9 1/8	9 3/4	10 1/2	100.00	105.00	110.00
3 1/2	9 3/8	10 1/8	10 7/8	120.00	125.00	130.00
4	9 7/8	10 5/8	11 1/4	140.00	145.00	150.00
5	11 1/4	12 1/8	13	170.00	175.00	185.00
6	12 1/4	13	13 7/8	220.00	225.00	235.00
7	....	14 5/8	15 3/8	....	300.00	325.00
8	....	16 1/4	17 1/4	....	375.00	400.00
10	....	20 1/4	21 5/8	....	575.00	600.00
12	....	22 5/8	24 1/8	....	825.00	850.00
14	....	26 3/8	27 7/8	....	1025.00	1075.00

Extra heavy screwed end valves have same face to face as standard screwed end valves.

### No. 2 Klipfel Pressure Regulators Piston Type—Expanded Outlet



Both Ends Screwed

The No. 2 Pressure Regulating Valve has an expanded outlet, which allows steam to expand quickly and decrease in velocity. It is especially adapted to conditions requiring large volumes of steam, reduced noiselessly, from comparatively high to lower pressures suitable for steam heating and other purposes. This valve can also be used for the control of air.

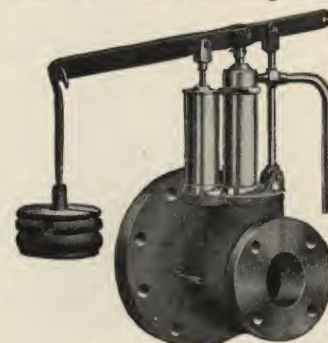
All valves having screwed inlet are suitable for inlet pressures up to 150 pounds, pressures up to 250 pounds (steam), the A.S.M.E. recommendation for standard flanges. All extra heavy flanged valves are suitable for inlet pressures up to 125 pounds (steam), the A.S.M.E. recommendation for standard flanges. All extra heavy flanged valves are suitable for inlet pressures up to 250 pounds.

Sizes 1x2 and 1½x2½ inches are made with bronze bodies and screwed ends only. Sizes 1½x3 and 2x4 inches are made with iron bodies in 3 styles of ends: both ends flanged, both ends screwed, and screwed inlet and flanged outlet.

Sizes 2½x5 and 3x6 inches are made with iron bodies, screwed inlet and flanged outlet, and both ends flanged. Unless otherwise ordered, sizes 1½x3 to 3x6 inches inclusive will be furnished with screwed inlet and flanged outlet, but will carry the list prices of both ends flanged. Sizes 4x8 inches and larger are made of iron bodies and flanged ends only. All sizes include bronze inner valves and trimmings.



Screwed Inlet, Flanged Outlet



Both Ends Flanged

When ordering, state valve number, sizes of inlet and outlet, style of ends, both initial and desired reduced pressures, nature of apparatus on which valve is to be used and whether for control of steam or air.

Flanged valves will be furnished suitable for 125 pounds inlet pressure, unless specified extra heavy, in which case both flanges will be made extra heavy, unless specially ordered extra heavy inlet and standard outlet flanges.

Both standard and extra heavy valves are shipped faced and drilled at no additional charge. Companion flanges are extra and are furnished only when ordered.

Size Inches	FACE TO FACE, IN. STANDARD VALVES			PRICE, EACH		
	Both Ends Serd.	Inlet Flgd. Outlet	Both Ends Flgd.	Standard Both Ends Screwed	Standard Both Ends Flanged	Ex. Hvy. Both Ends Flanged
1 x 2	4 1/4	....	....	\$55.00	....	....
1 1/4 x 2 1/2	4 3/8	....	....	60.00	....	....
1 1/2 x 3	7	7	7 5/8	70.00	\$75.00	\$80.00
2 x 4	8	7 7/8	9	85.00	90.00	95.00
2 1/2 x 5	....	8 3/4	9 1/2	....	105.00	110.00
3 x 6	....	8 3/4	10	....	130.00	135.00
4 x 8	....	....	13 1/8	....	200.00	210.00
5 x 10	....	....	15 1/8	....	300.00	315.00
6 x 12	....	....	18	....	425.00	440.00
8 x 16	....	....	16 1/4	....	600.00	625.00
10 x 20	....	....	20 1/4	....	800.00	825.00
12 x 24	....	....	22 3/8	....	1000.00	1050.00



## No. 3 Klipfel Pressure Regulators

## Diaphragm Type



Screwed Ends

The No. 3 Pressure Regulating Valve is intended for use in connection with vacuum, atmospheric, or very low pressure heating systems, where the required reduced pressure will not exceed five pounds. It can also be used for the control of air or gas.

The operation of this valve is very sensitive and is governed entirely by the pressure existing in the low pressure main, which acts directly

on the diaphragm through a small pipe. This pipe, however, is not required on sizes  $1\frac{1}{2}$  inches and smaller. Valve has no stuffing box to cause friction on the valve stem and as the diaphragm is made of ample area, very close regulation of the reduced pressure is assured. Inner valves and seats in all sizes are bronze bevel seated, as straight side plunger valves would require excessive diaphragm movement.

Screwed end valves are suitable for inlet pressures up to 150 pounds, unless especially made for higher pressures. Standard flanged valves are suitable for inlet pressures up to 125 pounds (steam), the A.S.M.E. recommendation for standard flanges. Extra heavy flanged valves are suitable for inlet pressures up to 250 pounds.

Sizes  $1\frac{1}{2}$  inches and under are made with bronze bodies, screwed ends only. Sizes 2 to 6 inches inclusive are made with iron bodies, either screwed or flanged ends, but screwed ends will be shipped if not ordered flanged. Sizes 7 inches and larger are made with iron bodies, flanged ends only.

When ordering, state valve number, pipe size, style of ends, both initial and desired reduced pressures, nature of apparatus on which valve is to be used and whether for the control of steam, air or gas.

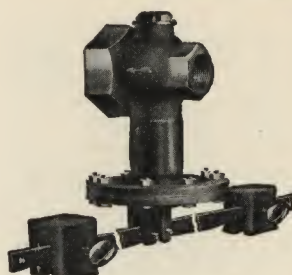
Flanged valves will be furnished suitable for 125 pounds inlet pressure, unless specified extra heavy, in which case both flanges will be made extra heavy, unless specially ordered extra heavy inlet and standard outlet flanges. Both standard and extra heavy valves are shipped faced and drilled at no additional charge. Companion flanges are extra and are furnished only when ordered.



Flanged Ends

## No. 4 Klipfel Pressure Regulators

## Diaphragm Type—Expanded Outlet



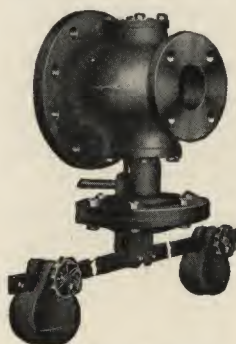
Both Ends Screwed

The No. 4 Regulating valve is especially adapted for service in connection with vacuum, atmospheric, or very low pressure heating systems, where the reduced pressure does not exceed five pounds. It can also be used for the control of air or gas.

All valves having screwed inlet are suitable for inlet pressures up to 150 pounds, unless especially made for higher pressures. All standard flanged valves are suitable for inlet pressures up to 125 pounds (steam), the A.S.M.E. recommendation for standard flanges. All extra heavy flanged valves are suitable for inlet pressures up to 250 pounds.

Sizes 1x2 and  $1\frac{1}{4}$ x $2\frac{1}{2}$  inches are made with bronze bodies and screwed ends only. Sizes  $1\frac{1}{2}$ x3 and 2x4 inches are made with iron bodies in 3 styles of ends; both ends screwed, both ends flanged, and screwed inlet and flanged outlet. Sizes  $2\frac{1}{2}$ x5 and 3x6 inches are made with iron bodies, screwed inlet and flanged outlet, and both ends flanged. Unless otherwise ordered, sizes  $1\frac{1}{2}$ x3 to 3x6 inches, inclusive, will be furnished with screwed inlet and flanged outlet, but will carry the prices of both ends flanged. Sizes 4x8 inches and larger are made with iron bodies and flanged ends only. All sizes include bronze bevel seated inner valves.

When ordering, state valve number, sizes of inlet and outlet, style of ends, both initial and desired reduced pressures, nature of apparatus on which valve is to be used and whether for the control of steam, air or gas.



Both Ends Flanged

Screwed Inlet  
Flanged Outlet

Flanged valves will be furnished suitable for 125 pounds inlet pressure, unless specified extra heavy, in which case both flanges will be made extra heavy, unless specially ordered extra heavy inlet and standard outlet flanges. Both standard and extra heavy valves are shipped faced and drilled at no additional charge. Companion flanges are extra and are furnished only when ordered. Sizes not listed, prices upon application.

Size In.	FACE TO FACE, IN.			PRICE, EACH		
	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.
$\frac{3}{4}$ - $1\frac{1}{2}$	$3\frac{7}{8}$	....	....	\$45.00	....	....
$\frac{3}{4}$	$3\frac{7}{8}$	....	....	45.00	....	....
1	$4\frac{1}{8}$	....	....	50.00	....	....
$1\frac{1}{4}$	$4\frac{1}{4}$	....	....	55.00	....	....
$1\frac{1}{2}$	$4\frac{7}{8}$	....	....	60.00	....	....
2	$6\frac{7}{8}$	$7\frac{1}{2}$	8	70.00	\$75.00	\$80.00
$2\frac{1}{2}$	8	9	$9\frac{5}{8}$	85.00	90.00	95.00
3	$9\frac{1}{8}$	$9\frac{3}{4}$	$10\frac{1}{2}$	100.00	105.00	110.00
$3\frac{1}{2}$	$9\frac{3}{8}$	$10\frac{1}{8}$	$10\frac{7}{8}$	120.00	125.00	130.00
4	$9\frac{7}{8}$	$10\frac{5}{8}$	$11\frac{1}{4}$	140.00	145.00	150.00
5	$11\frac{1}{4}$	$12\frac{1}{8}$	13	170.00	175.00	185.00
6	$12\frac{1}{4}$	13	$13\frac{7}{8}$	195.00	200.00	210.00
7	....	$14\frac{5}{8}$	$15\frac{5}{8}$	....	250.00	275.00
8	....	$16\frac{1}{4}$	$17\frac{1}{4}$	....	325.00	350.00
10	....	$20\frac{1}{4}$	$21\frac{5}{8}$	....	400.00	425.00
12	....	$22\frac{5}{8}$	$24\frac{1}{8}$	....	600.00	625.00
14	....	$26\frac{3}{8}$	$27\frac{7}{8}$	....	800.00	850.00

Extra heavy screwed end valves have same face to face as standard screwed end valves.

FACE TO FACE, IN.  
STANDARD VALVES

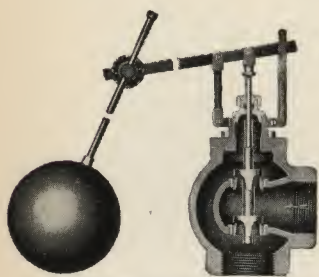
Size Inches	Both Ends Serd.	Inlet Flgd. Outlet	Both Ends Flanged	PRICE, EACH		
				Std. Both Ends Serd.	Std. Both Ends Flgd.	Ex. Hvy. Both Ends Flgd.
1 x 2	$4\frac{1}{4}$	....	....	\$55.00	....	....
$1\frac{1}{4}$ x $2\frac{1}{2}$	$4\frac{3}{8}$	....	....	60.00	....	....
$1\frac{1}{2}$ x 3	7	7	$7\frac{5}{8}$	70.00	\$75.00	\$80.00
2 x 4	8	$7\frac{7}{8}$	9	85.00	90.00	95.00
$2\frac{1}{2}$ x 5	....	$8\frac{3}{4}$	$9\frac{1}{2}$	....	105.00	110.00
3 x 6	....	$8\frac{3}{4}$	10	....	130.00	135.00
4 x 8	....	....	$13\frac{1}{8}$	....	175.00	185.00
5 x 10	....	....	$15\frac{1}{8}$	....	250.00	265.00
6 x 12	....	....	18	....	350.00	365.00
8 x 16	....	....	$16\frac{1}{4}$	....	500.00	525.00
10 x 20	....	....	$20\frac{1}{4}$	....	650.00	675.00
12 x 24	....	....	$22\frac{3}{8}$	....	850.00	900.00

Screwed inlet and standard flanged outlet valves carry same price as standard both ends flanged



## No. 27 Klipfel Balanced Float Valves

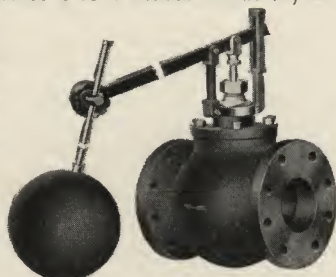
## Angle and Globe Pattern

Sectional View  
Screwed Ends, Angle

This valve is generally used to control the supply of cold water to open tanks, so as to maintain automatically a practically constant water level. The inner valve consists of two perfectly balanced straight side plunger discs and consequently is unaffected by water pressure. The swivel yoke and float lever on all sizes can be turned to any desired position. A rosette at end of lever permits ample adjustment of the

seamless copper float. Inner valves and seats are bronze and are fitted for cold water working pressures up to 200 pounds, unless specified for hot water.

Sizes 1½ inches and under are made with bronze bodies and screwed ends only. Sizes 2 to 6 inches inclusive, are made with iron bodies and can be furnished with either screwed or flanged ends, but screwed ends will be shipped if not ordered flanged. Sizes 7 inches and larger are made with iron bodies and flanged ends only. All sizes up to and including 14 inches are made either angle or globe pattern, but angle pattern will be furnished unless otherwise ordered. Sizes 16 inches and above are made globe pattern only.



Flanged Ends, Globe

When ordering, state valve number, pipe size, whether angle or globe pattern, style of ends, working pressure, and whether for cold or hot water. If for hot water, specify approximate temperature in degrees Fahrenheit.

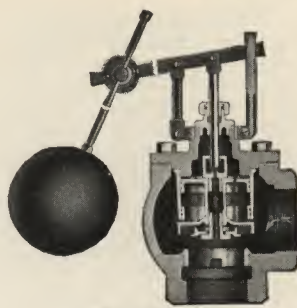
Flanged valves will be furnished with standard flanges unless ordered extra heavy. Both standard and extra heavy valves are shipped faced and drilled at no additional charge. A special right angle bent lever is furnished when valve is specified for installation in a vertical pipe line. Companion flanges are extra and are furnished only when ordered.

Size In.	ANGLE PATTERN CENTER TO END, IN.			GLOBE PATTERN FACE TO FACE, IN.			PRICE, EACH— GLOBE OR ANGLE		
	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.
¾	1 1/8	...	...	3 7/8	...	...	\$30.00	...	...
1	1 5/8	...	...	3 7/8	...	...	30.00	...	...
1 1/4	2 1/8	...	...	4 1/8	...	...	35.00	...	...
1 1/2	2 1/8	...	...	4 1/8	...	...	38.00	...	...
2	2 7/8	...	...	4 7/8	...	...	45.00	...	...
2 1/2	3 1/8	4 1/8	4 3/8	6 7/8	7 1/2	8	50.00	\$55.00	\$60.00
3	4 1/8	4 3/4	5 1/8	8	9	9 5/8	65.00	70.00	75.00
3 1/2	4 5/8	5 1/4	5 5/8	9 1/8	9 3/4	10 1/2	80.00	85.00	90.00
4	4 5/8	6 1/8	6 1/2	9 3/8	10 1/8	10 7/8	95.00	100.00	105.00
5	4 5/8	6 1/8	6 1/2	9 3/8	10 1/8	11 1/4	110.00	115.00	120.00
6	5 3/8	6 5/8	7 1/8	11 1/4	12 1/8	13	160.00	165.00	175.00
7	6 3/8	6 7/8	7 1/2	12 1/4	13	13 7/8	190.00	195.00	205.00
8	...	7 3/8	8 1/8	...	14 3/8	15 3/8	...	270.00	295.00
10	...	8 3/8	9 1/8	...	16 1/4	17 1/4	...	305.00	330.00
12	...	10 1/4	10 5/8	...	20 1/4	21 3/8	...	390.00	415.00
14	...	11 7/8	12 3/8	...	22 5/8	24 1/8	...	540.00	565.00
16	...	13 1/2	14 1/4	...	26 3/8	27 3/8	...	775.00	825.00
18	Sizes 16, 18 and 20 inches are made globe patterns only.						...	925.00	975.00
20							...	1150.00	1200.00
							...	1400.00	1450.00

Extra heavy screwed end valves have same center to end and face to face as standard screwed end valves.

## No. 7 Klipfel Single Seated Float Valves

## Angle and Globe Pattern

Sectional View  
Screwed Ends—Angle

This valve is used to maintain a constant water level in an open tank. It includes an auxiliary operated valve, a renewable valve disc, and seat area is equal to pipe area. When closed, it is tight and no leakage occurs. In operation, this valve is simple and reliable. All sizes include a swivel guide yoke and a packing box with gland to prevent leakage past the valve stem. Standard valves are suitable for working pressures up to 200 pounds.

When tank water level is low, both the auxiliary valve and the main valve are held open by the float and the inlet pressure. Water rising in the tank lifts the float and closes the auxiliary valve, and water passing the loosely fitted piston equalizes the pressure on both sides of the piston. Pressure now being equalized, the continued rise of the float causes the valve stem to move the main valve to its closed position. As the water level in the tank lowers, the auxiliary valve opens, and the pressure above the piston vents to the atmosphere through the central port in the piston. With this pressure vented, the lifting power of the supply pressure acting under the piston, plus the weight of the descending float and lever, again opens the main valve.

Sizes 1½ inches and under are made with bronze bodies and screwed ends only. Sizes 2 to 6 inches inclusive are made with iron bodies and can be furnished with either screwed or flanged ends, but screwed ends will be shipped unless ordered flanged. Size 8 inches is made with iron body and flanged ends only. All sizes are made either angle or globe pattern, but angle pattern will be furnished unless ordered globe. Internal working parts will be fitted for cold water service unless specified otherwise.

When ordering, state valve number, pipe size, whether angle or globe pattern, style of ends, working pressure, and whether for cold or hot water. If for hot water, specify approximate temperature in degrees Fahrenheit. Unless ordered extra heavy, flanged valves will be furnished with standard flanges. All flanged valves are shipped faced and drilled at no additional charge. Companion flanges are extra and are furnished only when ordered.

Size In.	ANGLE PATTERN CENTER TO END, IN.			GLOBE PATTERN FACE TO FACE, IN.			PRICE EACH— ANGLE OR GLOBE		
	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.	Std. Serd.	Std. Flgd.	Ex. Hvy. Flgd.
¾	1 1/8	...	...	4 1/4	...	...	\$36.00	...	...
1	2 1/8	...	...	5	...	...	40.00	...	...
1 1/4	2 1/8	...	...	5 1/8	...	...	45.00	...	...
1 1/2	2 1/2	...	...	5 1/4	...	...	50.00	...	...
2	3 1/8	4 1/8	4 3/8	7 1/8	8 1/4	8 3/4	60.00	\$65.00	\$70.00
2 1/2	3 5/8	4 3/4	5 1/8	8 3/4	9 1/2	10 1/8	70.00	75.00	80.00
3	4 1/2	5 1/4	5 5/8	9 3/4	10 1/2	11 1/4	90.00	95.00	100.00
4	4 13/16	6 1/8	6 1/2	11 1/2	12 1/4	12 7/8	130.00	135.00	140.00
5	5 1/2	7 1/4	7 1/2	13 1/2	14 1/2	15 3/8	175.00	180.00	190.00
6	6	8 1/8	8 1/2	15	16 1/4	17 1/8	200.00	205.00	215.00
8	...	9 1/8	9 3/8	...	19 1/8	20 1/8	...	375.00	400.00

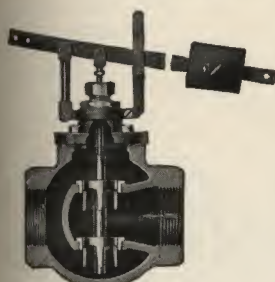
Sizes 10 and 12 inches are made to order and can be furnished in globe pattern with flanged ends only. Prices upon application.

Extra heavy screwed end valves have same center to end and face to face as standard screwed end valves.



## No. 62 Klipfel Balanced Lever Valves

## Globe and Angle Pattern

Sectional View  
Screwed Ends, Globe

This valve is especially adapted for service in controlling the supply to feed water heaters, purifiers, open and closed tanks, pumps, and boilers, or when a quick acting valve, unaffected by pressure, is required. Standard valves in all sizes are suitable for working pressures up to 125 pounds steam or 200 pounds water working pressure. For closed tank systems, stuffing box, shaft, levers, float, connecting rods with clevises and adjustable turnbuckle can be furnished at an extra price. All sizes are fitted with swivel yokes, so that lever can be shifted to any desired position. Inner valves and seats are bronze. The standard inner valve consists of two perfectly balanced straight side plunger discs. Bevel seated valves can be furnished at an extra price.

Sizes 1½ inches and under are made with bronze bodies and screwed ends only. Sizes 2 to 6 inches inclusive, are made with iron bodies, screwed or flanged ends, but screwed ends will be shipped if not ordered flanged. Sizes 7 inches and larger are made with flanged ends only. All sizes up to and including 14 inches are made either globe or angle pattern, but globe pattern will be furnished, unless otherwise ordered. Sizes 16 inches and above are made globe patterns only.

When ordering, state valve number, pipe size, whether globe or angle pattern, style of ends, working pressure, and whether for steam, cold or hot water. If for hot water, specify approximate temperature in degrees Fahrenheit.

Flanged valves will be furnished with standard flanges unless ordered extra heavy. Both standard and extra heavy valves are shipped faced and drilled at no additional charge. Companion flanges are extra and are furnished only when ordered. Cast steel valves for superheated steam, prices upon application.



Flanged Ends, Angle

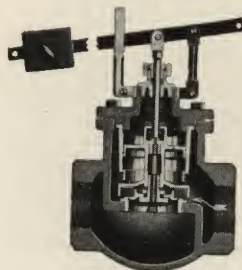
Size In.	GLOBE PATTERN FACE TO FACE, IN. CENTER TO END, IN.				ANGLE PATTERN FACE TO FACE, IN. CENTER TO END, IN.				PRICE, EACH GLOBE OR ANGLE			
	Std. Serd.	Std. Flgd.	Ex. Flgd.	Ex. Hvy.	Std. Serd.	Std. Flgd.	Ex. Flgd.	Ex. Hvy.	Std. Flgd.	Std. Flgd.	Ex. Flgd.	Ex. Hvy.
3/8-1/2	3 7/8	...	...	1 7/8	...	...	...	...	\$20.00	...	...	...
3/4	3 1/8	...	...	1 5/8	...	...	...	...	20.00	...	...	...
1	4 1/8	...	...	2 1/8	...	...	...	...	25.00	...	...	...
1 1/4	4 1/4	...	...	2 1/8	...	...	...	...	28.00	...	...	...
1 1/2	4 7/8	...	...	2 1/8	...	...	...	...	35.00	...	...	...
2	6 7/8	7 1/2	8	3 1/8	4 1/8	4 3/8	4 3/8	40.00	\$45.00	\$50.00	...	...
2 1/2	8	9	9 5/8	4	4 3/4	5 1/4	5 1/4	50.00	55.00	60.00	...	...
3	9 1/8	9 3/4	10 1/2	4 9/16	5 1/4	5 5/8	6 1/8	65.00	70.00	75.00	...	...
3 1/2	9 3/8	10 1/8	10 7/8	4 9/16	6 1/8	6 1/8	6 1/8	80.00	85.00	90.00	...	...
4	9 7/8	10 5/8	11 1/4	4 9/16	6 1/8	6 7/8	7 1/8	95.00	100.00	105.00	...	...
5	11 1/4	12 1/8	13	5 5/8	6 5/8	7 1/8	7 1/8	140.00	145.00	155.00	...	...
6	12 1/4	13	13 7/8	6 1/8	6 7/8	7 3/8	7 3/8	170.00	175.00	185.00	...	...
7	...	14 5/8	15 5/8	...	7 7/8	8 3/8	8 3/8	...	250.00	275.00	...	...
8	...	16 1/4	17 1/4	...	8 5/8	9 1/8	9 1/8	...	285.00	310.00	...	...
10	...	20 1/4	21 5/8	...	10 1/4	10 5/8	...	...	350.00	375.00	...	...
12	...	22 5/8	24 1/8	...	11 7/8	12 5/8	...	...	500.00	525.00	...	...
14	...	26 3/8	27 7/8	...	13 1/2	14 1/4	...	...	650.00	700.00	...	...
16	...	28 7/8	30	...	...	...	...	...	800.00	850.00	...	...
18	...	31 1/4	32 7/8	...	...	...	...	...	1000.00	1050.00	...	...
20	...	33 1/4	34 7/8	...	...	...	...	...	1250.00	1300.00	...	...

Sizes 16, 18 and 20 inches are made globe patterns only.

Extra heavy screwed end valves have same face to face and center to end as standard screwed end valves.

## No. 73 Klipfel Single Seated Lever Valves

## Globe and Angle Pattern

Sectional View  
Screwed Ends—Globe

This valve is especially adapted for service in controlling the supply to feed water heaters, purifiers, open and closed tanks, pumps, and boilers, or when a quick opening and tight closing valve is required.

Standard valves in all sizes are suitable for working pressures up to 125 pounds steam or 200 pounds water working pressure.

For closed tank systems, packing box, shaft, levers, float, connecting rods with clevises and adjustable turnbuckle can be furnished at an extra price.

All sizes include bronze working parts, a renewable inner valve disc, seat area equal to pipe area, a swivel guide yoke that can be turned to any desired position, a reversible lever, and a packing box with gland to prevent leakage past the valve stem. On sizes 1½ inches and under, the bronze cylinder is cast integral with the bonnet; on larger sizes it is screwed to the bolted valve cover.

Sizes 1½ inches and under are made with bronze bodies and screwed ends only. Sizes 2 to 6 inches inclusive are made with iron bodies, screwed or flanged ends, but screwed ends will be shipped if not ordered flanged. Size 8 inches is made with iron body and flanged ends only. All sizes are made either globe or angle pattern, but globe pattern will be furnished unless ordered angle. Internal working parts will be fitted for cold water and compressed air service unless specified otherwise.

When ordering, state valve number, pipe size, whether globe or angle pattern, style of ends, working pressure, and whether for steam, compressed air, or cold or hot water. If for hot water, specify approximate temperature in degrees Fahrenheit.

Flanged valves will be furnished with standard flanges unless ordered extra heavy. Both standard and extra heavy valves are shipped faced and drilled at no additional charge. Companion flanges are extra and are furnished only when ordered.

Size In.	GLOBE PATTERN FACE TO FACE, IN. CENTER TO END, IN.				ANGLE PATTERN FACE TO FACE, IN. CENTER TO END, IN.				PRICE, EACH GLOBE OR ANGLE			
	Std. Serd.	Std. Flgd.	Ex. Flgd.	Ex. Hvy.	Std. Serd.	Std. Flgd.	Ex. Flgd.	Ex. Hvy.	Std. Flgd.	Std. Flgd.	Ex. Flgd.	Ex. Hvy.
3/4	4 1/4	...	...	1 5/16	...	...	...	...	\$26.00	...	...	...
1	5	...	...	2 1/16	...	...	...	...	30.00	...	...	...
1 1/4	5 1/8	...	...	2 1/8	...	...	...	...	35.00	...	...	...
1 1/2	5 3/4	...	...	2 1/2	...	...	...	...	40.00	...	...	...
2	7 9/16	8 1/4	8 3/4	3 7/16	4 1/8	4 3/8	4 3/8	50.00	\$55.00	\$60.00	...	...
2 1/2	8 3/4	9 1/8	10 1/8	3 15/16	4 3/4	5 1/16	5 1/16	55.00	60.00	65.00	...	...
3	9 3/4	10 1/2	11 1/4	4 1/2	5 1/4	5 5/8	5 5/8	75.00	80.00	85.00	...	...
4	11 1/2	12 1/4	12 7/8	4 13/16	6 1/8	6 7/16	6 7/16	115.00	120.00	125.00	...	...
5	13 1/2	14 1/8	15 3/8	5 1/2	7 1/4	7 11/16	7 11/16	155.00	160.00	170.00	...	...
6	15	16 1/4	17 1/8	6	8 3/8	8 9/16	8 9/16	180.00	185.00	195.00	...	...
8	...	19 1/8	20 1/8	...	9 1/8	9 5/8	...	...	355.00	380.00	...	...

Sizes 10 and 12 inches are made to order and can be furnished in globe pattern with flanged ends only. Prices upon application.

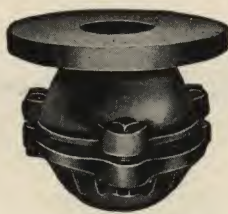
Extra heavy screwed end valves have same face to face and center to end as standard screwed end valves.



## Iron Body Foot Valves



No. 881, Screwed



No. 882, Flanged

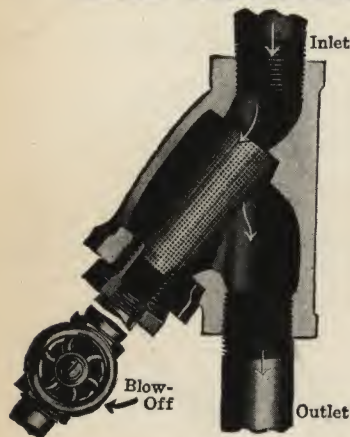
Foot valves 7 inches and larger are fitted with bronze axles. All joints are faced.

## Screwed

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Black	Galvanized		Black	Galvanized
1/2	\$1.15	\$1.75	4	\$7.30	\$11.00
3/4	1.15	1.75	4 1/2	10.50	15.75
1	1.30	2.00	5	11.25	16.75
1 1/4	1.40	2.10	6	14.75	22.00
1 1/2	1.90	2.85	7	35.00	53.00
2	2.40	3.60	8	41.00	62.00
2 1/2	3.30	5.00	10	64.00	110.00
3	3.90	5.75	12	100.00	155.00
3 1/2	5.60	8.50	....	.....	.....

## Flanged

Size Inches	Diam. of Flanges Inches	PRICE, EACH		Size Inches	Diam. of Flanges Inches	PRICE, EACH	
		Black	Galv.			Black	Galv.
2	6	\$3.50	\$5.50	6	11	\$17.50	\$27.00
2 1/2	7	4.50	7.00	7	12 1/2	38.00	57.00
3	7 1/2	5.75	9.00	8	13 1/2	45.00	72.00
3 1/2	8 1/4	7.50	12.00	10	16	70.00	120.00
4	9	9.50	15.00	12	19	112.00	170.00
4 1/2	9 1/4	13.00	20.00	14	21	150.00	.....
5	10	14.00	22.00	16	23 1/2	200.00	.....

Style B Straitaway Self-Cleaning Strainers  
Screwed Ends and Screwed Strainer Cap

For protecting equipment against the ravages of dirt, grit, scale and all foreign matter on steam, water, air, gas and oil lines. No foreign matter can enter the apparatus when it is protected by a self-cleaning strainer.

Simple in construction, easily installed on any pipe line and is self-cleaning. Composed of a cast iron body having a perforated brass strainer cylinder, the area of which is several times that of the inlet or outlet. The self-cleaning feature per-

mits cleaning of the strainer by opening the blow-off valve, without removing strainer from the body.

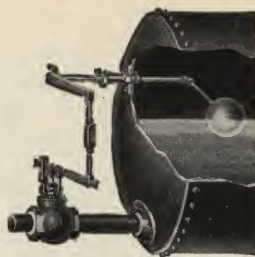
The construction of the strainer body permits its installation on either horizontal or vertical lines.

Brass strainer cylinders have perforations ranging from 1/64 to 1/4 inch inclusive; 1/64-inch perforations are furnished unless otherwise specified and are suitable for steam, air or gas service; 3/64-inch perforations are furnished for liquid service unless otherwise specified.

When ordering specify service.

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Strainer Complete	Extra Cylinders		Strainer Complete	Extra Cylinders
1/4	\$2.50	\$ .20	1 1/4	\$4.20	\$ .60
3/8	2.75	.25	1 1/2	5.00	.75
1/2	3.00	.35	2	8.50	1.00
3/4	3.35	.40	2 1/2	11.50	1.30
1	3.95	.50	3	13.50	1.40

## No. 20 Klipfel Water Level Controllers

Controlling Water Supply  
to Tank

Designed to maintain automatically a constant water level in a closed tank. It is suitable for either hot or cold water service. By substituting an electric switch for the lever valve, the controller may be used to control a motor driven pump.

When used to control either hot or cold water flowing into a tank, No. 73 single seated lever valve with renewable composition valve disc is recommended.

When used to control the action of a steam pump so as to maintain a desired water level in a closed tank, No. 62 balanced lever valve is recommended.

Regular equipment consists of either a No. 73 single seated lever valve or a No. 62 balanced lever valve, as ordered; a seamless copper float, suitable for tank pressures up to 50 pounds; a galvanized float rod; a taper threaded brass packing box with a brass shaft extending through it, which carries 2 adjustable collars and a float rod fitting; a suitable bronze lever with set screw; 2 clevises with bolts; and short connecting lengths of steel rod or galvanized pipe.

Size Inches	Lever Valve	SHIPPING WEIGHT, POUNDS		COMPLETE WITH No. 73 SINGLE SEATED LEVER VALVE	COMPLETE WITH No. 62 BALANCED LEVER VALVE	Attachments without Lever Valve
		Standard Screwed	Standard Flanged			
1/2-3/4	21	..	..	\$61.00	\$55.00	\$35.00
1	22	..	..	65.00	60.00	35.00
1 1/4	23	..	..	70.00	63.00	35.00
1 1/2	24	..	..	75.00	70.00	35.00
2	51	60	85.00	\$90.00	75.00	\$80.00
2 1/2	70	80	110.00	115.00	105.00	110.00
3	88	98	130.00	135.00	120.00	125.00
4	115	138	170.00	175.00	150.00	155.00
5	168	188	230.00	235.00	215.00	220.00
6	198	222	255.00	260.00	245.00	250.00

## Seamless Copper Floats

Diam. In.	Spud Size Pipe In.	Price per Doz.	Diam. In.	Spud Size Pipe In.	Price per Doz.
3	1/8	\$17.00	5 1/2	1/4	\$32.00
3 1/2	1/8	21.50	6	1/4	38.00
4	1/8	26.00	8	3/8	72.00
4 1/2	1/8	27.50	10	1/2	120.00
5	1/4	30.00	12	3/4	220.00



## No. 6707 Compression Float Valves



Size Inches	Price Rough Each	Size Inches	Price Rough Each
3/8	\$1.40	1 1/4	\$6.00
1/2	1.50	1 1/2	8.00
3/4	2.25	2	14.00
1	3.75	....	.....

Prices are for float valve only, without ball.

No. 884 Brass Foot Valves  
with Strainer

Size Inches	Price Each	Size Inches	Price Each
1/2	\$1.50	1 1/2	\$3.75
3/4	1.50	2	5.50
1	2.00	2 1/2	12.00
1 1/4	2.75	3	16.00

We are as near as your  
nearest telephone.



**Jenkins Bronze Y or Blow-Off Valves**

For Working Pressures: 150 Pounds Steam; 250 Pounds Water  
With Renewable Seat Rings



No. 124 Screwed

Size Inches	PRICE, EACH	
	No. 124 Screwed	No. 125 Flanged
3/8	\$3.00	.....
1/2	3.00	\$7.50
3/4	4.50	10.50
1	6.00	13.50
1 1/4	7.50	16.50
1 1/2	9.75	19.50
2	14.00	30.00
2 1/2	27.00	42.00
3	37.50	55.50

**Jenkins Iron Body Y or Blow-Off Valves**

With Yoke, Bronze Mounted, Jenkins Disc, Renewable  
Bronze Seat Rings



No. 296, Screwed

For Working Pressures:  
150 Pounds Steam  
250 Pounds Water

Size Inches	FACE TO FACE, IN.		Diam. Flgs. In.
	Screwed	Flanged	
2	8	9 13/16	6
2 1/2	9 1/2	11	7
3	11 1/2	12 1/8	7 1/2

Size Inches	PRICE, EACH	
	No. 296 Screwed	No. 297 Flanged
2	\$16.00	\$19.00
2 1/2	22.00	27.00
3	29.00	34.00

**Jenkins Bronze Y or Blow-Off Valves**

For Working Pressures: 250 Pounds Steam; 400 Pounds Water  
With Renewable Seat Rings

Size In.	PRICE, EACH	
	No. 134 Screwed	No. 135 Flanged
1/2	\$7.00	\$10.00
3/4	9.50	12.50
1	12.50	17.00
1 1/4	16.00	22.00
1 1/2	20.00	28.00
2	30.00	43.50
2 1/2	56.00	78.00
3	72.00	94.00



No. 134, Screwed

**Jenkins Iron Body Y or Blow-Off Valves**

With Yoke, Bronze Mounted, Steam Metal Disc  
Renewable Bronze Seat Ring

For Working Pressures:  
250 Pounds Steam  
400 Pounds Water

Size In.	FACE TO FACE, IN.		Diam. Flgs. In.
	Screwed	Flanged	
2	9	10 3/4	6 1/2
2 1/2	10 9/16	12 1/2	7 1/2
3	12	14	8 1/4

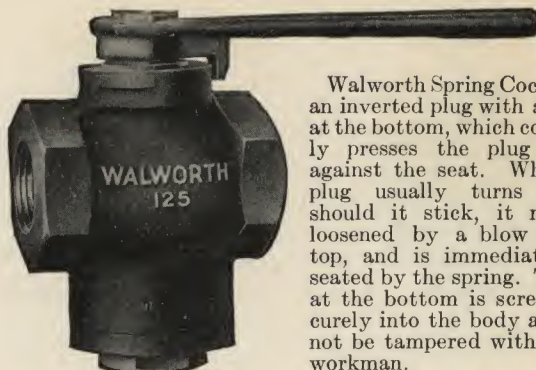
Size In.	PRICE, EACH	
	No. 336 Screwed	No. 337 Flanged
2	\$30.00	\$34.00
2 1/2	38.00	45.00
3	49.00	60.00



No. 336, Screwed

**Walworth Spring Plug Iron Cocks**

For 125 Pounds Steam Working Pressure



Walworth Spring Cocks have an inverted plug with a spring at the bottom, which constantly presses the plug firmly against the seat. While the plug usually turns easily, should it stick, it may be loosened by a blow on the top, and is immediately re-seated by the spring. The cap at the bottom is screwed securely into the body and cannot be tampered with by the workman.

Iron body cocks, for steam, water, or compressed air, will be furnished with brass plug and steel springs, unless otherwise specified.

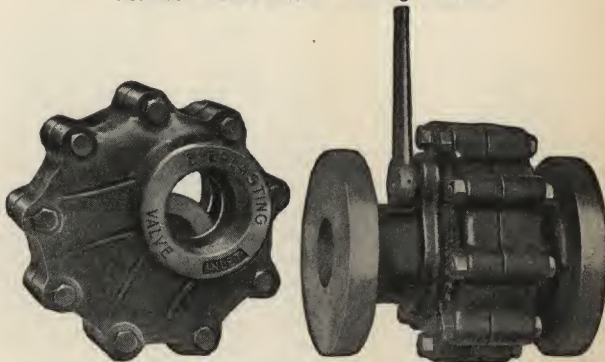
All iron cocks, for alkaline solutions, will be furnished with steel springs. Brass springs can be supplied if desired, at the same price.

Unless otherwise ordered, all cocks will be furnished with handles pinned on with split pin or spring cotter.

Size Inches	HANDLES PINNED ON		WITHOUT HANDLES		No. 7913 Handles Only Each
	No. 2324 Iron Body	No. 2326 All Iron	No. 2325 Iron Body	No. 2327 All Iron	
1/2	\$1.65	\$1.05	\$1.40	\$ .80	\$ .07
3/4	2.25	1.50	1.95	1.20	.09
1	2.85	2.40	2.45	1.95	.14
1 1/4	4.40	3.30	3.75	2.65	.25
1 1/2	7.55	5.85	6.65	4.95	.44
2	11.65	8.25	10.55	7.15	.56
2 1/2	25.00	16.00	23.00	15.00	.80
3	38.00	23.85	36.50	22.35	1.00

**Everlasting Iron Body Blow-Off Valves**

For 250 Pounds Steam Working Pressure



Screwed

Flanged

Designed to give continual, uninterrupted service, being self-grinding and self-compensating at all points. Every valve is carefully inspected and tested; all valves for boiler and other high pressure service are worked under 250 pounds steam pressure before leaving the factory.

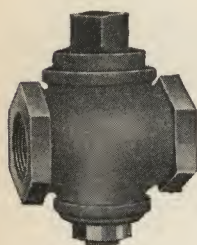
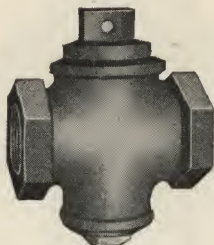
Size In.	APPROXIMATE FACE TO FACE, IN.		Diam. Flanges In.	PRICE, EACH			
	Screwed	Flanged		Screwed	Flanged	RACK AND Screwed	PINION Flanged
1/4	2 1/8	.....	.....	\$9.00	.....	.....	.....
3/8	2 1/2	.....	.....	9.00	.....	.....	.....
1/2	2 1/2	.....	.....	9.00	.....	.....	.....
3/4	3	.....	.....	11.00	.....	.....	.....
1	3 1/2	7 1/4	4 7/8	11.00	\$15.00	.....	.....
1 1/4	3 3/8	7 1/4	5 1/4	16.00	19.00	.....	.....
1 1/2	4 1/4	8 1/8	6 1/8	22.00	26.00	.....	.....
2	4 3/8	8 7/8	6 1/2	25.00	30.00	\$34.50	\$39.00
2 1/2	5 1/8	10 1/4	7 1/2	32.00	39.00	40.00	48.00
3	6 3/8	11 7/8	8 1/4	44.00	50.00	54.00	60.00
4	6 7/8	12	10	60.00	70.00	71.00	81.00
5	7	12 1/2	11	.....	.....	95.00	100.00
6	7 1/2	13	11	.....	.....	110.00	117.00



## Standard Iron Cocks

## Square and Flat Head

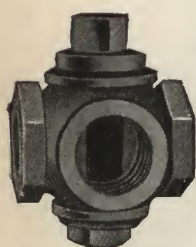
For 125 Pounds Steam Working Pressure

Square Head  
ScrewedFlat Head  
Screwed

Size Inches	SCREWED					FLANGED		
	All Iron Each	Galy. Each	With Brass Washer Each	With Brass Plug Each	With Brass Plug and Washer Each	All Iron Each	With Brass Washer Each	With Brass Plug Each
1/2	\$ .90	\$1.35	\$1.00	\$1.30	\$1.40	.....	.....	.....
3/4	1.05	1.60	1.20	1.60	1.75	.....	.....	.....
1	1.30	1.95	1.55	1.90	2.15	.....	.....	.....
1 1/4	1.60	2.40	1.95	2.65	3.00	.....	.....	.....
1 1/2	1.95	2.95	2.35	3.75	4.15	.....	.....	.....
2	2.70	4.05	3.20	5.25	5.75	\$4.25	\$4.75	\$7.00
2 1/2	4.40	6.60	5.15	8.75	9.50	6.25	7.00	10.50
3	6.75	10.15	7.75	13.00	14.00	9.50	10.50	15.75
3 1/2	12.00	18.00	14.00	27.50	29.50	15.00	17.00	30.00
4	15.50	23.25	19.00	36.50	40.00	19.00	22.50	40.00
5	32.00	48.00	38.00	67.00	73.00	36.00	42.00	70.00
6	45.00	67.50	53.00	94.00	102.00	50.00	58.00	100.00

Standard Three-Way Iron Cocks  
Square Head

For 125 Pounds Steam Working Pressure



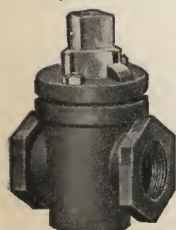
No. 872, Screwed

Size Inches	PRICE, SCREWED, EACH			
	All Iron	With Brass Washer	With Brass Plug	With Brass Plug and Washer
1/2	\$1.50	\$1.60	\$1.90	\$2.00
3/4	1.65	1.80	2.20	2.35
1	1.80	2.05	2.40	2.65
1 1/4	2.05	2.40	3.10	3.45
1 1/2	2.65	3.05	4.50	4.90
2	3.65	4.15	6.25	6.75
2 1/2	5.35	6.10	9.75	10.50
3	7.50	8.50	13.75	14.75
3 1/2	14.00	16.00	30.00	32.00
4	19.00	22.50	40.00	43.50
5	36.50	42.50	71.50	77.50
6	52.00	60.00	100.00	108.00
8	110.00	120.00	210.00	220.00

Prices of flanged three-way cocks upon application.

## Iron Blow Off Cocks

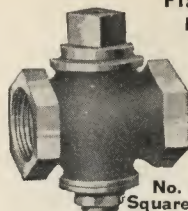
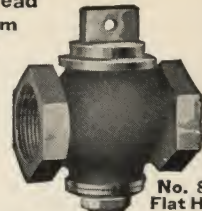
## Asbestos U Packed

For Working Pressure: Standard, 150 Pounds  
Extra Heavy, 250 PoundsPrices given below apply to screwed and flanged.  
Regular cocks, 1/8 to 3/4 inch and extra heavy 1/2 to 1 1/2  
inches made screwed only.Screwed  
No. 875

Size In.	PRICE, EACH		Size In.	PRICE, EACH	
	Stand- ard	Extra Heavy		Stand- ard	Extra Heavy
1/8	\$1.60	.....	2	\$7.00	\$10.00
1/4	1.60	.....	2 1/2	12.00	17.00
3/8	1.60	.....	3	18.00	26.00
1/2	1.60	\$2.40	3 1/2	27.00	38.00
3/4	2.10	3.00	4	30.00	42.00
1	2.50	3.50	5	45.00	60.00
1 1/4	3.50	5.00	6	60.00	80.00
1 1/2	4.75	6.75	...	.....	.....

## Brass Steam Cocks

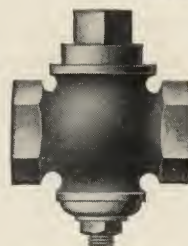
## Flat and Square Head

For 125 Pounds Steam  
Working PressureNo. 859  
Square HeadNo. 860  
Flat Head

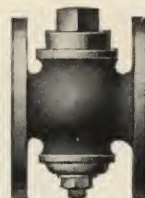
Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Square or Flat Head	Square Head With Check		Square or Flat Head	Square Head With Check
1/4	\$ .85	.....	1 1/4	\$3.70	\$3.95
3/8	1.00	.....	1 1/2	4.85	5.15
1/2	1.25	\$1.40	2	7.30	7.65
3/4	1.70	1.90	2 1/2	14.50	.....
1	2.35	2.55	3	22.50	.....

## Brass Steam Cocks

## Screwed or Flanged



No. 863, Screwed



No. 864, Flanged

Flanged  
cocks made  
to order  
only.

## For 150 Pounds Steam Working Pressure

Size In.	Price, Ea. Screwed	Size In.	PRICE, EACH		Size In.	PRICE, EACH	
			Screwed	Flanged		Screwed	Flanged
1/8	\$ .85	3/4	\$1.70	.....	2	\$7.30	\$18.00
1/4	.85	1	2.35	\$7.30	2 1/2	14.50	27.50
3/8	1.00	1 1/4	3.70	9.70	3	22.50	43.00
1/2	1.25	1 1/2	4.85	11.75	...	.....	.....

## For 250 Pounds Steam Working Pressure

Size In.	Price, Ea. Screwed	Size In.	PRICE, EACH		Size In.	PRICE, EACH	
			Screwed	Flanged		Screwed	Flanged
1/4	\$1.40	1	\$3.60	\$10.00	2 1/2	\$23.00	\$41.00
3/8	1.75	1 1/4	6.00	14.25	3	35.00	63.00
1/2	1.75	1 1/2	7.75	17.25	...	.....	.....
3/4	2.40	2	11.50	27.00	...	.....	.....

## 3-Way Brass Steam Cocks

## Square Head—With Check

For 100 Pounds Steam Working Pressure

With Extra Large Plug and  
Full Openings

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/4	\$1.80	1	\$3.75	2 1/2	\$18.75
3/8	2.10	1 1/4	5.75	3	26.00
1/2	2.50	1 1/2	7.15	...	.....
3/4	3.00	2	11.00	...	.....



No. 862

## 4-Way Brass Steam Cocks

## Square Head—With Check

For 100 Pounds Steam Working Pressure

These cocks are furnished to order only.

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/2	\$6.00	1	\$11.00	1 1/2	\$17.50
3/4	8.50	1 1/4	14.50	2	25.00

## Wrenches for Brass Steam and Gas

## Cocks

## Square and Flat Head

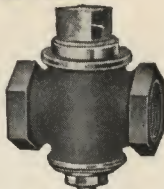
Size In.	PRICE, EACH		Size Inches	PRICE, EACH		Size Inches	Price Each Square Head
	Square Head	Flat Head		Square Head	Flat Head		
1/4	\$ .05	\$ .05	1	\$ .14	\$ .14	2 1/2 & 3	\$ .56
3/8	.06	.06	1 1/4	.19	.25	3 1/2 & 4	1.00
1/2	.07	.07	1 1/2	.25	.44	.....	.....
3/4	.09	.09	2	.44	.56	.....	.....



### Brass Gas Service Stops Flat, Square and Tee Head



No. 866, Flat Head



No. 867, Square Head

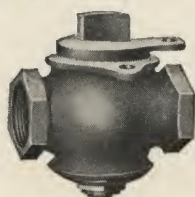
Size In.	PRICE, EACH				Size In.	PRICE, EACH	
	Flat Head	Square Head	Tee Handle	Tee Handle With Check		Flat Head	Square Head
1/4	\$ .90	\$ .90	\$ .90	\$ 1.05	1	\$ 2.10	\$ 2.10
3/8	1.00	1.00	1.00	1.15	1 1/4	3.25	3.25
1/2	1.10	1.10	1.10	1.30	1 1/2	4.60	4.60
3/4	1.30	1.30	1.30	1.55	2	8.00	8.00

Flat head furnished unless otherwise ordered.

### Brass Lock Wing Gas Service Stops Standard Flat and Round Way



No. 8432



No. 8532

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	No. 8432 Flat Way	No. 8532 Round Way		No. 8432 Flat Way	No. 8532 Round Way
1/4	\$ .80	.....	1	\$ 1.65	\$ 2.60
3/8	.85	\$ 1.25	1 1/4	2.55	3.85
1/2	.95	1.40	1 1/2	3.55	5.65
3/4	1.05	1.75	2	6.00	10.10

### Standard Brass Gas Service Stops

#### Tee Handle

Size In.	PRICE, EACH		Size In.	PRICE, EACH	
	No. 276 Without Check	No. 278 With Check		No. 276 Without Check	No. 278 With Check
1/4	\$ .90	\$ 1.00	1/2	\$ 1.10	\$ 1.30
3/8	1.00	1.15	3/4	1.30	1.55

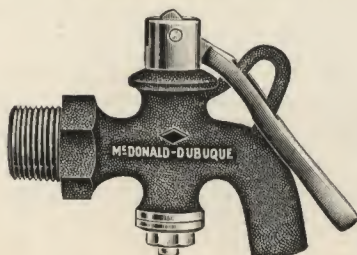
### No. 298 Brass Gas Stove Cocks

#### With Check—Lever Handle

Size Inches	Price Each	Size Inches	Price Each
1/4	\$ 1.15	3/4	\$ 2.15
3/8	1.25	1	3.25
1/2	1.35	...	....

### No. 6 Lock Lever Plain Faucets

For Gasoline and Oil  
With Hinged Lever



Size.....inches	1/2	5/8	3/4	1	1 1/4	1 1/2
Each.....	\$ 1.30	1.85	2.25	3.30	5.60	9.30

### Brass Steam Whistles For 125 Pounds Steam Working Pressure



No. 894, without Valve



No. 895, with Valve

Diam. Bell In.	Lgth. Bell In.	Size Pipe In.	PRICE, EACH		Diam. Bell In.	Lgth. Bell In.	Size Pipe In.	PRICE, EACH	
			With- out Valve	With Valve				With- out Valve	With Valve
1	2 1/2	1/4	\$ 2.20	\$ 3.10	3 1/2	5 1/2	1	\$ 9.50	\$ 11.50
1 1/4	3	1/4	2.75	3.75	4	6 1/2	1 1/4	12.00	15.00
1 1/2	3 1/4	3/8	3.00	4.00	5	8	1 1/2	19.00	22.50
2	4	1/2	4.35	5.50	6	9 1/2	2	24.00	33.00
2 1/2	4 1/2	3/4	5.25	6.50	8	14	2 1/2	70.00	95.00
3	5	3/4	7.25	8.50	.....	.....	.....	.....	.....

Whistles with longer bell than standard made to order.

Always order whistles by diameter of bell, and not by the size of pipe connection.

### No. 899 Brass Whistle Valves

For 125 Pounds Steam Working Pressure

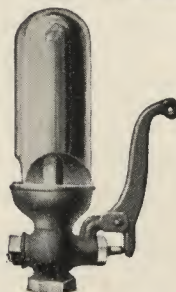


This brass whistle valve is strong and durable in construction and will give satisfactory service.

Size Inches	Price Each
3/8.....	\$ 2.00
1/2.....	2.50
3/4.....	3.00
1.....	3.50
1 1/4.....	5.00
1 1/2.....	6.00
2.....	9.00
2 1/2.....	18.00
3.....	27.00

### Single Bell Chime Whistles

For 25 to 150 Pounds Working Pressure  
For Steam or Compressed Air



No. 896, with Lever Valve



No. 897, without Valve

Diam. Bell In.	Size Pipe In.	PRICE, EACH		Diam. Bell In.	Size Pipe In.	PRICE, EACH	
		With Lever Valve	With- out Valve			With Lever Valve	With- out Valve
1 1/2	3/8	\$ 6.00	\$ 4.50	4	1 1/4	\$ 18.00	\$ 14.00
2	1/2	7.00	5.00	5	1 1/2	28.00	22.00
2 1/2	3/4	9.00	7.00	6	1 1/2	42.00	38.00
3	3/4	11.00	8.00	8	2	100.00	85.00
3 1/2	1	15.00	11.00	.....	.....	.....	.....

Always order whistles by diameter of bell, and not by the size of pipe connection.



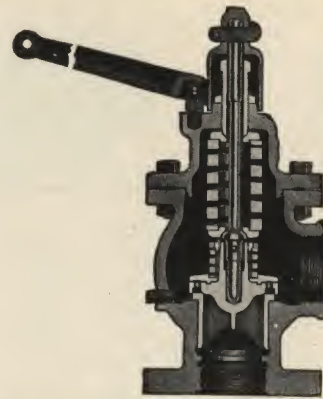
**Arco Pop Safety Valves****No. 420 Low Pressure Stream  
Black Enamel Finish**

Designed for low pressure heating boilers. Regularly set to relieve at 15 pounds. Comply with A.S.M.E. standards. No extra charge for setting at 10 pounds. Special settings, less than 15 pounds, at extra charge.

**No. 421—For Vapor Heating**

Can be set to relieve at  $1\frac{1}{2}$  or 3 pounds. Specify relieving pressure.

Size In.	PRICE, EACH		Size In.	PRICE, EACH	
	No. 420	No. 421		No. 420	No. 421
$\frac{3}{4}$	\$5.25	\$5.25	$2\frac{1}{2}$	\$26.00	\$26.00
1	6.00	6.00	3	37.50	37.50
$1\frac{1}{4}$	6.75	6.75	$3\frac{1}{2}$	50.00	50.00
$1\frac{1}{2}$	8.25	8.25	4	80.00	80.00
2	11.25	11.25	...	...	...

**No. 892 Iron Body Pop Safety Valves  
Plain Spring Type****Brass Pop Safety Valves****Standard and Muffler Types—Top Outlet**

For Working Pressures: Standard, 125 Pounds; Muffler, 250 Pounds

**No. 1152  
Standard**

Size In.	PRICE, EACH		
	No. 1152 Standard	No. 1158 Muffler	No. 1158 with Lock-up Attach.
$\frac{1}{2}$	\$8.00	.....	.....
$\frac{3}{4}$	8.00	.....	.....
1	10.00	\$21.00	\$26.00
$1\frac{1}{4}$	12.00	26.00	32.00
$1\frac{1}{2}$	15.00	32.00	39.00
2	23.00	48.00	55.00

**No. 1158  
Muffler**

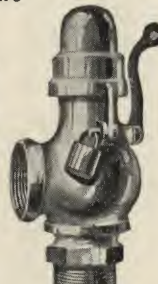
In ordering, give style number and pressure at which valves are wanted set to blow off.

**Brass Pop Safety Valves****Side Outlet**

For 250 Pounds Working Pressure  
For stationary boilers.

**No. 1144  
Standard**

Size In.	PRICE, EACH	
	No. 1144 Standard	No. 1146 Lock-up
$\frac{1}{2}$	\$11.00	\$12.00
$\frac{3}{4}$	11.00	12.00
1	13.00	14.00
$1\frac{1}{4}$	16.00	17.00
$1\frac{1}{2}$	19.00	21.00
2	29.00	31.00
$2\frac{1}{2}$	46.00	49.00

**No. 1146  
Lock-up**

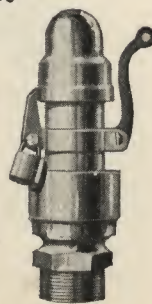
When ordering, state style number and pressure at which valves are wanted set to blow off.

**Brass Pop Safety Valves****Top Outlet**

For 250 Pounds Working Pressure  
For stationary boilers.

**No. 1148**

Size In.	PRICE, EACH	
	No. 1148 Standard	No. 1150 Lock-up
$\frac{1}{2}$	\$8.00	\$9.00
$\frac{3}{4}$	8.00	9.00
1	10.00	11.00
$1\frac{1}{4}$	12.00	13.00
$1\frac{1}{2}$	15.00	17.00
2	23.00	25.00
$2\frac{1}{2}$	38.00	40.00

**No. 1150**

When ordering, state style number and pressure at which valves are wanted set to blow off.

Set any pressure specified up to 150 pounds. Brass or monel metal seats. Made for stationary boilers and conforming with the requirements of the A.S.M.E. boiler code.

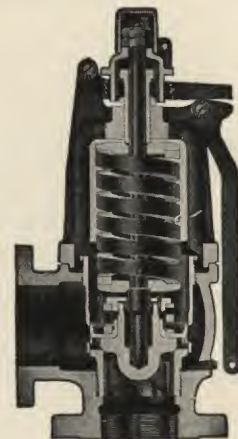
When ordering, always state the pressure at which valves are wanted set to blow off. When not otherwise specified valves with brass seat will be furnished.

Made with flanged inlet and screwed outlet. Hexagon screwed base furnished, when so ordered, at same price.

In localities where boiler inspector seal is required and so specified, an extra hole will be drilled in the stem key at top of valve, for attaching the wire and seal.

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	With Brass Seat	With Monel Metal Seat		With Brass Seat	With Monel Metal Seat
$2\frac{1}{2}$	\$42.00	\$48.00	4	\$75.00	\$87.00
3	50.00	57.00	$4\frac{1}{2}$	100.00	115.00
$3\frac{1}{2}$	68.00	75.00	5	120.00	135.00

Valves are furnished locked, including lock, at an extra charge.

**No. 893 Iron Body Pop Safety Valves****Outside Spring and Yoke Type**

Set to any pressure specified up to 250 pounds.

These valves will fulfill all safety valve requirements of stationary and marine boilers, including locks.

Valves are furnished locked up.

Regularly furnished with flanged inlet; hexagon screw base furnished when so ordered.

Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	With Brass Seat	With Monel Metal Seat		With Brass Seat	With Monel Metal Seat
$*1\frac{1}{2}$	\$75.00	\$81.00	$3\frac{1}{2}$	\$160.00	\$167.00
2	100.00	106.00	4	170.00	182.00
$2\frac{1}{2}$	120.00	126.00	$4\frac{1}{2}$	225.00	240.00
3	135.00	142.00	...	.....	.....

\*Furnished screwed outlet only and with square flange on inlet.



**No. 1125 Screwed Brass Relief Valves**

For steam, gas, oil and water.

For use on cylinders, pipe lines, presses, pumps, receivers, tanks, etc.

For service on steam, sizes  $\frac{1}{2}$  to  $2\frac{1}{2}$ -inch will be furnished for any pressure specified between 5 and 250 pounds and sizes 3,  $3\frac{1}{2}$  and 4-inch will be furnished for 200 pounds only.

For gas, oil or water of normal temperatures the  $\frac{1}{2}$  to  $2\frac{1}{2}$ -inch sizes can be furnished for 300 pounds maximum set pressure, 250 pounds working pressure, and the 3,  $3\frac{1}{2}$  and 4-inch sizes for 250 pounds maximum set pressure, 200 pounds working pressure.



Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
$\frac{1}{2}$	\$11.00	$1\frac{1}{4}$	\$16.00	$2\frac{1}{2}$	\$46.00	4	\$135.00
$\frac{3}{4}$	11.00	$1\frac{1}{2}$	19.00	3	77.00	..	.....
1	13.00	2	29.00	$3\frac{1}{2}$	105.00	..	.....

**No. 1126 Brass Steam and Water Relief Valves**

Recommended for service on steam and water lines and for receivers and cylinders where instantaneous relief is wanted from excessive pressures.

Furnished at any pressure specified between 5 and 250 pounds.

Size Inches	Fin. Price Each	Size Inches	Fin. Price Each
$\frac{1}{2}$	\$11.00	$1\frac{1}{2}$	\$19.00
$\frac{3}{4}$	11.00	2	29.00
1	13.00	$2\frac{1}{2}$	46.00
$1\frac{1}{4}$	16.00	..	.....

When ordering, always specify the number and state the pressure at which valves are wanted set to relieve.

**No. 1134 Brass Steam and Water Relief Valves**

For service on steam, valves will be furnished for any pressure specified between 5 pounds and 250 pounds.

For air, gas, oil or water of normal temperatures, valves will be furnished for 300 pounds maximum set pressure, 250 pounds working pressure.

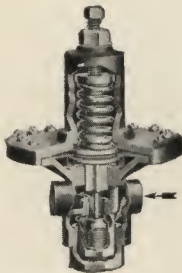
When ordering, specify the size and state the pressure at which valves are wanted set to relieve.

Size Inches	Price Each	Size Inches	Price Each
$\frac{1}{2}$	\$11.00	$1\frac{1}{2}$	\$19.00
$\frac{3}{4}$	11.00	2	29.00
1	13.00	$2\frac{1}{2}$	46.00
$1\frac{1}{4}$	16.00	..	.....

**No. 10 Klipfel Bronze Pressure Regulators  
Spring Loaded  
Metal Diaphragm Type**

For initial steam pressures up to 225 pounds and air, gas, oil or hot or cold water pressures up to 300 pounds. Female screwed ends only.

When ordering, state pipe size, initial and desired reduced pressures; nature of apparatus with which regulator is to be used. State whether it is for control of steam, air, gas, oil or hot or cold water.



Size Inches	Face to Face, In.	Center to Top, In.	Center to Bottom, In.	Ship. Wt., Lbs.	Price Each
$\frac{1}{8}$	$2\frac{1}{4}$	5	$1\frac{3}{4}$	6	\$25.00
$\frac{1}{4}$	$2\frac{1}{4}$	5	$1\frac{3}{4}$	6	30.00
$\frac{3}{8}$	$3\frac{1}{4}$	5	$2\frac{1}{4}$	7	35.00
$\frac{1}{2}$	$3\frac{1}{4}$	5	$2\frac{1}{4}$	7	40.00

**No. 1530 American Relief Valves**

For Domestic Water Tank Service

For Pressures up to 125 Pounds

The No. 1530 Valve is designed especially for domestic water tank service.

It is made with rough brass body, brass disc and seat and male inlet, as shown, and can be furnished at any pressure up to 125 pounds.

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1
Price, No. 1530.....each	\$3.50	4.00	5.00



All threaded connections can be furnished British standard pipe thread if desired, at same price.

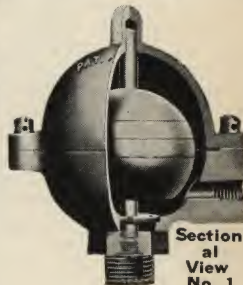
**Red Top Relief Valves**

Valves are of bronze with special nickel piston held to seat by lead ball. Operates on the gravity principle.

No. 1 relieves pressure in domestic hot water supply before danger point is reached; No. 2 is the basis of an efficient pressure hot water heating system; No. 3 is used on smaller house systems of pressure hot water heating, on all hot water heating systems up to 1200 feet radiation.

No. 1 can be set to relieve at 50, 75, 100 and 130 pounds; Nos. 2 and 3 at 30 pounds.

No.	Each	Size, In.
1	\$6.00	$\frac{1}{2}$
2	15.00	1
3	6.00	$\frac{1}{2}$



Sectional View No. 1

**No. 1123 Iron Body Water Relief Valves  
Brass Seat**

For pumps, stand pipes, pipe lines, cylinders, etc.

Set at any pressure from 10 to 300 pounds.

Size In.	Price Each	Size In.	Price Each
$2\frac{1}{2}$	\$42.00	4	\$75.00
3	50.00	$4\frac{1}{2}$	100.00
$3\frac{1}{2}$	68.00	5	120.00

Made with screwed outlet and with hand wheel unless otherwise specified.

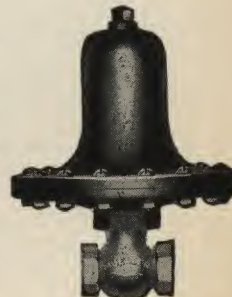
Base or outlet flanges will be made to suit any diameter or thickness required, at an additional price.

When ordering, always specify the number and state the pressure at which valves are wanted set to relieve.

**No. G9050 Mueller Diaphragm Relief Valves**

For hot or cold water service where it is necessary to relieve pressure. Opens and relieves pressure preventing it from rising above a predetermined point.

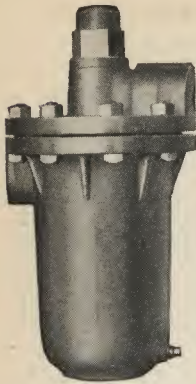
Valves for pressures up to 125 pounds have bronze bodies and iron diaphragm chamber; pressures 125 to 250 pounds have bronze bodies and bronze diaphragm chamber.



Size In.	125-Lb. Each	300-Lb. Each	Size In.	125-Lb. Each	300-Lb. Each	Size In.	125-Lb. Each	300-Lb. Each
$\frac{1}{2}$	\$7.50	\$19.68	1	\$16.74	.....	$1\frac{1}{2}$	\$34.66	.....
$\frac{3}{4}$	10.72	23.68	$1\frac{1}{4}$	27.46	.....	2	50.22	.....



### Trerice Steam Traps



For use on steam separators, drip pockets, pipe coils, unit heaters, radiators, kilns, etc., for any pressure steam, superheated, etc.; on air lines, air tanks, separators, etc., for removing condensation from the air. For use on oil separators for discharging oil.

In changing a Trerice Trap from high to low pressure it is only necessary to change the valve seat.

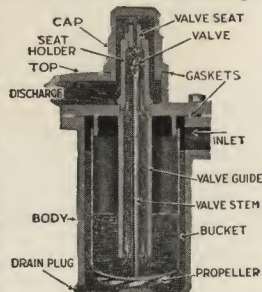
The valve will turn and seat in a different place after each discharge, when closing it will turn on the seat and form a

clean seating surface, insuring a tight valve and seat.

Any size can be carried in a pipe line making it unnecessary to build shelves or supports to carry the trap. Valve and seat are of high chrome steel. The seat is reversible. It is self cleaning, the propeller on bottom of bucket keeps sediment stirred until it passes out of trap.

When ordering state pressure at which trap operates. Prices upon application.

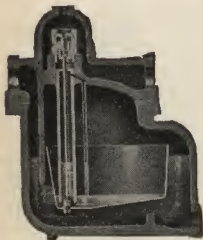
No.	1	2	3	4
Inlet and Outlet.....in.	$\frac{1}{2}$ - $\frac{3}{4}$	$\frac{1}{2}$ - $\frac{3}{4}$	1- $\frac{1}{4}$	1 $\frac{1}{2}$ -2
Height.....inches	6 $\frac{1}{2}$	12 $\frac{1}{2}$	14	17
Diameter.....inches	5 $\frac{1}{2}$	6 $\frac{1}{2}$	8	9 $\frac{1}{2}$
Cap. per Hr.....pounds	1025	2400	7800	14400
Cap. per Hr.....gallons	123	288	936	1728
Cap. Rad.....sq. ft.	828	1632	5304	9792
Cap. 1-In. Pipe.....lin. ft.	2484	4900	15925	29400
Weight.....pounds	10	23 $\frac{1}{2}$	37	65



Sectional View

### Ellis Red Head Steam Traps

#### Non-Air Binding and Air Eliminating



This trap will automatically discharge all condensation and air from steam lines. Discharge is intermittent, avoiding wire drawing of valve. Body and bucket are cast iron; the valve stem, air and discharge tubes of heavy brass. The valve and seat are of monel metal, reversible, self centering and regrinding.

Incoming condensate floats the bucket and closes the valve. As water rises in trap and overflows into bucket the buoyancy is lost and bucket sinks,

its weight pulling the valve rod and opening valve. The pressure in trap acting on surface of water forces water out of trap and when bucket is empty, except for water seal, it floats and closes the valve.

When trap has discharged and valve is closed, water in discharge tube starts to lower, pulling vacuum on eliminator tube, which syphons air into discharge tube.

When water has partially dropped away from discharge tube, the air syphoned up air-eliminator tube is locked in discharge tube and is expelled when trap again discharges.

Traps are furnished in the following standard ranges:

"A" Low Pressure.....	0 to 10 Lbs.
"B" Medium Pressure.....	10 to 30 Lbs.
"C" High Pressure.....	30 to 125 Lbs.
"D" Extra High Pressure.....	125 to 250 Lbs.

Trap No.	Each	Size Pipe Connections Inches	Cap. Lbs. Water per Hr.	Cap. Sq. Ft. Radiation	Cap. Lin. Ft. 1-In. Pipe	Approx. Ship. Wt., Lbs.
1	\$30.00	$\frac{1}{2}$	1000	3000	9000	40
2	30.00	$\frac{3}{4}$	1800	5400	16200	55
3	40.00	1	2200	6600	19800	70
4	55.00	1 $\frac{1}{4}$	4600	13800	41400	90
5	75.00	1 $\frac{1}{2}$	5800	17400	52200	140
6	105.00	2	8000	24000	72000	225
7	160.00	2 $\frac{1}{2}$	11000	33000	99000	320
8	185.00	3	14000	42000	126000	375

### Nason Pattern Steam Traps

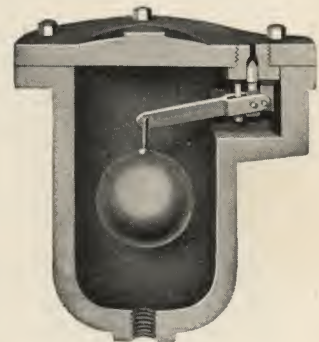


In action, the valve of this trap is held against its seat by the buoyancy of a float to which it is attached, and nothing can pass through until a sufficient quantity of water has accumulated in the float to sink it; then the valve is opened rapidly to its full capacity, and the water is discharged by the pressure of steam upon it, after which, it closes quickly, preventing the escape of steam; and this action is repeated as often as the necessary amount of water accumulates in the float.

This rapid intermittent action not only prevents the waste of steam, but also preserves the valve from the effects of wire drawing which occurs in those traps that depend for their action on the expansion of metals, which is necessarily slow, and soon results in the destruction of the valve.

No.	Pipe Conn.	SIZE, INCHES Height to Top of Valve	Diam. Outside Flanges	Square Feet Surface Each Will Drain	Weight Pounds	Price Each
1	$\frac{3}{4}$	11	11	350	46	\$16.00
2	$\frac{3}{4}$	14	14	900	85	20.00
3	1	15	15 $\frac{1}{2}$	1400	115	27.50
4	1 $\frac{1}{4}$	18 $\frac{1}{2}$	18 $\frac{1}{2}$	2000	185	42.50
5	1 $\frac{1}{2}$	22	24	3500	356	70.00

### Wright-Austin Air Traps



The Wright-Austin Air Trap is suitable for removing air from water or other liquid under pressure.

Extensively and successfully used on hot water heating systems, closed water tanks and receivers, water supply lines, centrifugal pumps, etc.

When desired, it is furnished with a whistle for sounding an alarm when the water reaches a certain level in a tank or receiver.

The trap is positive in action, entirely dependable, and requires no attention. Extremely simple and well built.

Operates under any working pressure up to 150 pounds.

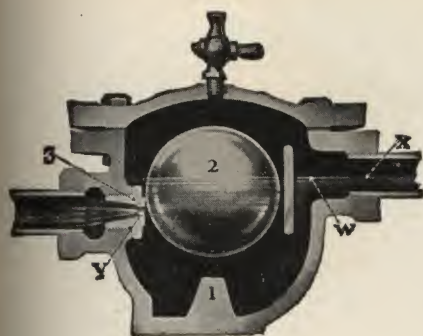
Can be furnished tapped for  $\frac{1}{2}$ -inch connection, if desired, without extra charge.

Connection.....	inches	$\frac{3}{4}$
Diameter.....	"	6
Height.....	"	7 $\frac{1}{2}$
Weight.....	pounds	15
Price.....	each	\$13.00

If whistle is desired, specify on order, and add \$1.75 to price.



## J-M Ball Steam Traps



View of Trap Discharging

The only moving part, a hollow, seamless ball, takes the place of the levers, buckets, thermostats, cotters, etc., in other traps.

The advantages of this simplicity are that the first cost of the trap is less, and the usual expense of adjustment

is eliminated. When this trap has been connected, the ball put in and the cover bolted, that is the end of the job. There is no necessity for the steam-fitter to return for adjustment. And this same simplicity insures permanent efficiency, for, with a copper sphere as the only moving part, and the buoyant force of water operating this sphere, there is nothing to get out of order.

The trap is equipped with a pet cock in the top, not as an air relief but because it is useful in showing that the trap is operating properly.

No.	Pipe Connections In.	Cap. Water per Hour Lbs.	Ht. In.	Face to Face In.	Wt. Lbs.	Price Each
2A	3/4	600	6	7 5/16	14 1/4	\$27.00
3A	1	1400	7 1/8	8 1/4	23	35.00
4A	1 1/4	2400	8 3/4	10 7/8	47	40.00
5A	1 1/2	5000	11 1/4	12 3/4	85	70.00
6A	2	8000	13	14 1/2	126	95.00

## J-M Ball Junior Steam Traps



This trap, with a capacity of 250 pounds of condensate per hour, is intended for small capacity service in which the operating steam pressure is less than 50 pounds.

The body is of bronze.

The cover screws in place making a metal-to-metal joint with the body. No gasket is required.

Discharge bushing screws into place through threaded discharge pipe connection.

Size Pipe, In.	Pressure Range, Lbs.	Water per Hour, Lbs.	Lgth. In.	Ht. In.	Wt. Lbs.	Price Each
1/2	1 to 10	250	4 1/4	3 5/8	2 3/8	\$10.00
10 " 50						

## Sarco No. 7 Adjustable Steam Traps

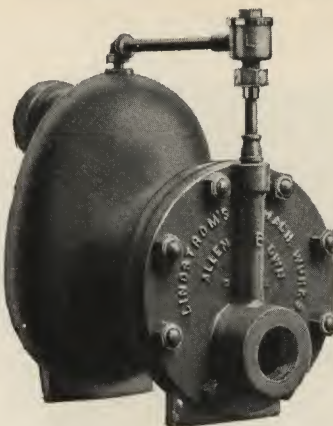


The Sarco Low Pressure Steam Trap is used on pressures from 1 to 50 pounds, and the high-pressure steam traps are used from 50 to 200 pounds.

It is so designed that the trap may be installed in any position without requiring supports and floor space.

Inlet and Outlet In.	Low Pressure Each	High Pressure Each	Weight Pounds	Inlet and Outlet In.	Low Pressure Each	High Pressure Each	Weight Pounds
1/2	\$6.00	\$7.75	2 1/8	1 1/2	\$30.00	\$34.50	18
3/4	9.45	10.35	2 3/8	2	38.70	48.30	29
1	11.25	12.00	3 1/4	2 1/2	51.75	60.00	44
1 1/4	24.15	28.50	11 1/2	3	60.00		49

## Lindstrom Corliss Valve Steam Traps



This trap has no toggles, pins, springs, packing nor stuffing boxes.

The valve which rotates over the discharge port is actuated by the rising and lowering of the seamless copper float. At the moment when enough water has collected in the trap to raise the float sufficiently, the discharge port is uncovered and the water is released and as the level lowers, the port is again closed and tightly sealed. The valve is

always sealed in water, preventing steam escaping.

The illustration shows the trap fitted with automatic air valve, provided at a small additional cost.

No. of Trap	Without Air Valve Each	With Air Valve Each	Size Trap Inches	Lineal Feet of 1-Inch Pipes	Square Feet Surface	Pounds Water Per Hour
0	\$48.00	\$58.00	1/2	1750	600	2380
1	56.00	66.00	3/4	2750	900	3900
2	72.00	82.00	1	3725	1250	5275
3	80.00	90.00	1 1/4	6700	2250	9500
4	104.00	114.00	1 1/2	10000	3350	14300
5	120.00	130.00	2	15000	5000	22250
6	160.00	160.00	2 1/2	27250	9000	38650

## Capacity of Steam Traps

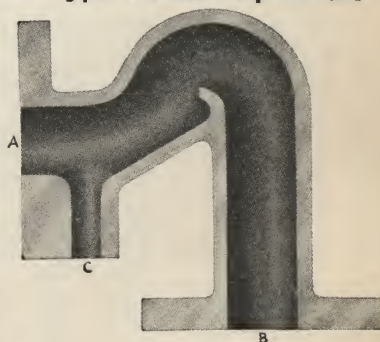
Pressure Lbs. per Sq. In.	No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
1	240	390	526	948	1425	2325	3156
2	350	550	730	1350	2020	3275	4465
3	420	675	910	1650	2475	4000	5425
4	480	775	1060	1900	2860	4650	6312
5	540	870	1200	2125	3200	5200	7008
10	750	1200	1675	3000	4500	7050	10000
15	920	1500	2050	3675	5600	8625	12250
20	1075	1700	2350	4250	6375	10325	14025
25	1200	1925	2640	4750	7200	11550	15804
30	1300	2200	2890	5200	7700	12675	17325
35	1450	2300	3125	5625	8425	13670	18700
40	1525	2500	3340	6025	9000	14600	19975
50	1680	2750	3750	6750	10075	16500	22360
60	1850	2900	4080	7350	11025	18250	24500
70	1990	3100	4395	7950	11950	19525	26300
80	2150	3500	4680	8500	12750	20650	28100
90	2250	3650	4975	9000	13500	21756	29725
100	2380	3900	5275	9500	14300	22250	31584
110	2500	4050	5540	10000	14950	24200	33125
120	2600	4300	5775	10500	15600	25250	34575
135	2775	4500	6125	11025	16550	26500	36725
150	2900	4700	6450	11600	17500	28200	38650

## Lindstrom Elbow Type Steam Separators

For preventing steam condensate entering machinery requiring dry steam.

A Inlet  
B Outlet  
C Drain

Any condensate carried along horizontal inlet pipe readily flows down drip pipe (c) to steam trap which the dry steam passes over the deflector to outlet.

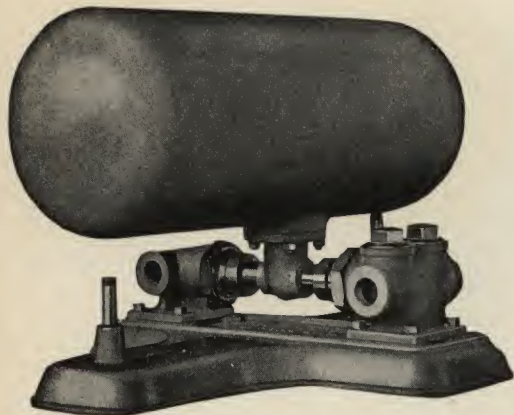


Size In.	Each	DIMEN., IN. A to Center B	B to Center A	Size In.	Each	DIMEN., IN. A to Center B	B to Center A
1 1/4	\$12.00	4 1/2	3 3/4	3 1/2	\$40.00	10	6
1 1/2	15.00	5 1/8	4	4	50.00	11 1/2	6 1/4
2	20.00	6 1/8	4 3/8	4 1/2	60.00	11 3/8	7
2 1/2	25.00	7 1/8	5	5	75.00	12 3/4	7 1/8
3	30.00	7 3/4	5 1/2	6	100.00	16 3/8	8



## Ellis Tilting Steam Traps

For 175 Pounds Steam Working Pressure



## Direct Return Traps

The direct return trap will automatically collect water of condensation and will discharge the water directly into the boiler. It must be placed at least six feet (eight feet or higher recommended) above the water line in the boiler. If there is not sufficient pressure in the system being drained to force the water into the direct return trap, then a lifting trap must be used in connection with the direct return trap.

The lifting trap is usually placed on the floor of the boiler room or at some low point where the various condensation lines can drain. It collects the condensation and lifts the water to the direct return trap which in turn discharges the water to the boiler.

The counterweight is placed inside the tank head and is weighted to handle the full capacity of the trap at each discharge. This insures the tilting of the trap only when the tank is full. In other words, the steam clearance between the water level and the top of the tank is reduced to a minimum which means steam economy. The absence of an exposed and shifting weight also prevents tampering. The counterweight is made by welding a double head in one end of the trap tank. The space formed by the opposed heads forms the receptacle into which is poured the necessary amount of lead to form the counterweight. The final 10 per cent of the counterweight is poured in the form of shot after the lead has hardened so that should it be necessary to change the weight it can be done by removing the brass plug in the head.

The inside steam and water pipes are extra heavy wrought iron and are welded into the internal cast steel flange to prevent loosening and internal leakage with consequent water hammer. The trap tank may be removed from the trunnion by removing six studs.

All trap tanks are given a hydrostatic test of 450 pounds and working test of 125 pounds steam.

No. of Trap	SIZE, INCHES			Lbs. of Water Discharged per Hr.	Gal. of Water Discharged per Hr.	Lineal Ft. of One Inch Pipe Trap Will Drain	Sq. Ft. of Radiation Trap Will Drain	Approx. Ship. Wt. Lbs.
	Water Inlet and Outlet	Steam	Vent					
2	1 1/2	1 1/2	1 1/2	900	108	4500	1500	80
3	3/4	3/4	3/4	1600	192	8000	2660	140
4	1	1	1	2700	324	13500	4500	186
5	1 1/4	1 1/4	1 1/4	4000	480	20000	6660	280
6	1 1/2	1 1/4	1 1/4	5500	660	27500	9100	380
7	2	1 1/2	1 1/2	8500	1020	42500	14100	650
8	2 1/2	1 1/2	1 1/2	12500	1500	62500	20800	910
9	3	2	2	17000	2040	85000	28300	1230
10	4	2 1/2	2 1/2	35000	4200	170500	58300	2550

Prices upon application.

## Blakeslee Jet Pumps

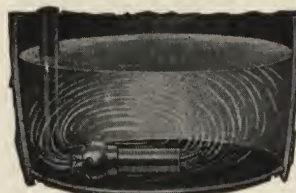
For raising water and other liquids. Adapted for tanneries, breweries, creameries, railroad water stations, etc.



Size Pump Inches	Suction Pipe Inches	Discharge Pipe Inches	Steam Pipe Inches	Capacity Gallons per Minute	Price Each
3/4	3/4	1/2	3/8	8	\$8.00
1	1	3/4	1/2	15	10.00
1 1/4	1 1/4	1	1/2	20	12.00
1 1/2	1 1/2	1 1/2	3/4	30	14.00
2	2	1 1/2	3/4	40	16.00
2 1/2	2 1/2	2	1	50	20.00
3	3	2 1/2	1	60	24.00
4	4	3	2	250	70.00

## Penberthy Noiseless Steam Water Heaters

The use of this heater does away with all noise such as otherwise occurs when heating a tank or barrel of water or other liquid with steam. It is of special value to creameries, chemical works, breweries, etc.



Size No.	Steam Pipe In.	Disch. Pipe In.	*Cap. Gals.	Price Each	Size No.	Steam Pipe In.	Disch. Pipe In.	*Cap. Gals.	Price Each
F	1/4	3/8	50	\$1.50	K	1	1 1/4	125	\$3.00
G	3/8	1/2	60	1.75	L	1 1/4	1 1/2	175	4.00
H	1/2	1	75	2.00	M	1 1/2	2	250	5.00
J	3/4	1	100	2.50	N	2	2 1/2	500	8.00

\*Gallons of water heated from 70° to 210° in 30 minutes with 70 pounds steam pressure.

## No. 910 Sylphon Steam-Water Mixers

This mixer may be used anywhere hot water is required and steam and water are available. It has a wide range of adaptability in industrial plants for supplying warm or hot water for wash-stands, showers, and processes of all characters; wash wheels in laundries and tanneries, wash waters in textile mills, sugar mills, chemical plants, bakeries, confectionery plants, restaurants, etc.

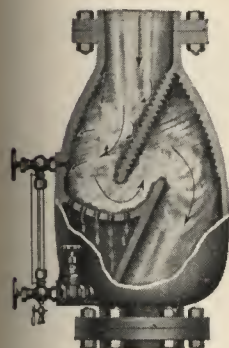
Especially suited for hard waters. This mixer is intended primarily for industrial uses where the slight noise in mixing steam and water is not objectionable. Steam pressure must always be 15 pounds higher than water pressure.

When ordering mixer, give size of steam and water connections, steam pressure, water pressure, temperature range and quantity of water to be heated in gallons per minute.

No.	Temperature Range	SIZE PIPE, INCHES	Shipping Weight Pounds	Price Each
		Steam	Water	
23	40° to 80° F.	1/2	3/4	195 \$125.00
24	60° to 100° F.	1/2	1	196 130.00
25	100° to 140° F.	1/2	1 1/4	197 135.00
26	140° to 180° F.	1/2	1 1/2	198 140.00
27	160° to 200° F.	3/4	3/4	196 145.00
28	180° to 220° F.	3/4	1	197 150.00
29	190° to 230° F.	3/4	1 1/4	198 155.00
30	210° to 250° F.	3/4	1 1/2	200 160.00
31	220° to 260° F.	1	3/4	205 165.00
32	230° to 270° F.	1	1	208 170.00
33	245° to 285° F.	1	1 1/4	209 175.00
34	275° to 315° F.	1	1 1/2	211 180.00



### Type A Wright-Austin Vertical Cast Steam Separators



Made of cast semi-steel. Designed for installation in vertical steam lines just above the throttle of the engine.

The baffle is so set that when the incoming steam is impinged against it and rebounds to opposite wall of separator, the particles of moisture are deflected down the deep, slanting corrugations on the walls and baffle, into well below.

Also made in cast steel for superheat. Prices quoted upon receipt of pipe size, working pressure and degrees of superheat.

Order or inquiry must state whether standard or extra heavy separator is desired.

Pipe Size Inches	DIAM. FLANGES INCHES		Face to Face In.	Diam. Separator Inches	Drain In.	Wt. Lbs.	*PRICE, EACH	
	Stand- ard	Extra Heavy					Stand- ard	Extra Heavy
1½	S.E.	S.E.	12	7	1½	45	\$27.50	\$27.50
2	S.E.	S.E.	12	7	1½	45	32.50	32.50
2½	7	7½	13	8	¾	85	40.00	44.00
3	7½	8¼	15¼	9	¾	115	46.00	48.00
3½	8½	9	16¾	10	¾	135	50.00	54.00
4	9	10	18	11	¾	170	60.00	65.00
4½	9¼	10½	20	12	¾	215	75.00	78.00
5	10	11	22¼	13	1	240	85.00	92.00
6	11	12½	25¼	15	1	330	108.00	120.00
7	12½	14	28½	17	1¼	440	150.00	162.00
8	13½	15	31½	19	1¼	575	185.00	220.00
10	16	17½	37	23	1½	910	280.00	310.00
12	19	20½	40¼	25½	1½	1080	325.00	370.00

\*Price includes water gauge only.

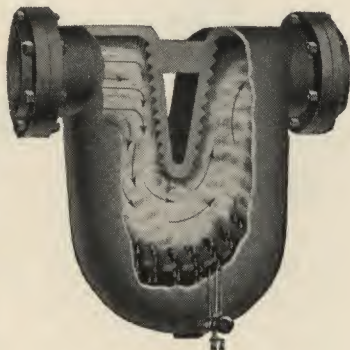
### Type B Wright-Austin Horizontal Cast Steam Separators

The Type B is an ideal cast semi-steel separator for limited head-room.

The corrugations, or grooves, on the baffle slant downward at an angle forming a junction with other grooves on inside walls of separator, draining the condensation directly into the well below.

Also made in cast steel for superheat. Prices quoted upon receipt of pipe size, working pressure and degrees of superheat.

Order or inquiry must state whether standard or extra heavy separator is desired.



Pipe Size In.	*Each		DIAM. FLANGES INCHES		Face to Face In.	Center Line of Flanges to Bottom Inches	Drain In.	Wt. Lbs.
	Stand- ard	Extra Heavy	Stand- ard 125 Lbs.	Extra Heavy 250 Lbs.				
1½	\$23.00	\$23.00	S.E.	S.E.	10½	9	½	45
2	26.00	26.00	S.E.	S.E.	10½	9	½	45
2½	33.00	34.00	7	7½	13¼	12	¾	115
3	38.00	41.00	7½	8¼	15¼	13	¾	125
3½	48.00	51.00	8½	9	16	14	¾	165
4	60.00	63.00	9	10	18¼	15	¾	215
5	78.00	81.00	10	11	20¾	20¾	1	285
6	110.00	122.00	11	12½	24¼	22	1	435
7	156.00	160.00	12½	14	27¼	25	1¼	600
8	204.00	216.00	13½	15	30¼	29	1¼	835
10	276.00	288.00	16	17½	31	36	1½	1135
12	372.00	400.00	19	20½	36	40	1½	1580

\*Price includes water gauge only.

### Type S Wright-Austin Horizontal Cast Self-Cleaning Oil Separators



This separator is an excellent device for purification of exhaust steam. It is suitable for use on exhaust steam lines from engines, pumps, compressors, etc. The manufacturers' guarantee provides for such elimination of oil, grease and impurities that the condensation may safely be used as distilled water for boiler feed, ice making, textile and chemical processes, laundries, or any other purpose for which either exhaust steam or purified condensation may be employed. It is also efficient as a catch-all and for elimination of moisture and oil from low pressure vapor, gas and air. Suitable for pressures up to 40 pounds per square inch.

It is designed so that the incoming steam, with oil suspension, strikes a large circular baffle with deep corrugations. The small particles of oil and condensate carried along with the steam at a velocity of from 5000 to 15000 feet per minute, are dashed into the grooves and separated from the steam, which being lighter is easily diverted around the baffle, while the oil and condensate flows down the grooves into the bottom of the separator.

Ample area is provided for the free passage of the steam all around the baffle, on top and all sides, thus spreading out the steam into a comparatively thin volume or layer. The small particles of oil and condensate easily pass through the thin layer and are not picked up again by steam. Having a large internal area, the Type S Separator will not produce back pressure.

Just inside the inlet of the separator is a trough for catching the oil carried along the bottom of the pipe. From this trough a drain leads to the bottom of the separator. On the rim of the baffle is a large deep shoulder to catch any oil that may possibly have been carried across the face of the baffle. Further on, an inner flange or ring is cast just inside the outlet which will absolutely prevent the escape of any oil that might still adhere to the walls of the separator.

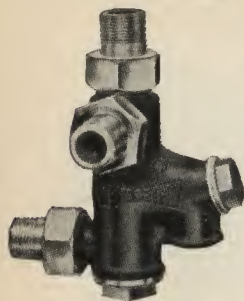
The Type S Separator and its baffle are made in one solid casting, the baffle being attached to the body of the separator by several lugs. There are no parts to become loose or misplaced, and no joints or gaskets, so it will not leak. No oil can accumulate on the baffle as it is continuously flushed clean by the force of hot condensate, making the separator self cleaning.

Size In.	Each	Diam. Flange In.	Face to Face Flange In.	Width In.	Height In.	Size Drain In.	Wt. Lbs.
1½	\$24.00	Serd.	9⅞	12	15½	¾	60
2	27.00	Serd.	10	12⅞	15½	¾	70
2½	42.00	7	10¼	14½	17⅞	1	150
3	48.00	7½	10½	15	18	1	165
3½	54.00	8½	11	17	20	1	190
4	72.00	9	12	19	23	1	235
4½	80.00	9¼	13	21	25	1¼	290
5	100.00	10	15	23	27	1¼	370
6	122.00	11	17	25	30	1½	475
7	156.00	12½	17½	27	33	1½	580
8	170.00	13½	18	29	36	1½	670
10	228.00	16	19	32	40	1½	830
12	300.00	19	20	34	42	1½	1040
14	348.00	21	20	36	43	1½	1160
16	400.00	23½	22	40	44	1½	1350
18	456.00	25	24	42	46	1½	1530
20	528.00	27½	26	44	49	1½	1660

Can be furnished in sizes up to 48 inches. Price includes water gauge but not companion flanges or drain valves.



## Penberthy Automatic Injectors



A high-grade automatic machine; meaning, if the current of water is broken by any cause, the injector will pick up the water and re-establish the current to the boiler without the least attention. Every machine is carefully tested, and will work on the following points: Start low, 20 to 22 lbs. steam on 3-foot lift. Work high, 165 to 170 lbs. steam on 3-foot lift. Lift water, 20 to 24 feet on 60 to 80 lbs. steam. Will deliver water to boiler at 160 to 212 degrees, accord-

ing to temperature of feed water and steam pressure. Water 200 to 212 degrees can nearly always be delivered at nearly all pressures over 50 lbs. by throttling suction valve and delivering minimum capacity. It is advisable in many cases to install an injector large enough so that the supply can be cut down and attain this result, thereby saving fuel. By placing a short piece of pipe having a stopcock, in the overflow, and closing after the injector has started, water 8 to 10 degrees hotter can be handled, but the injector is rendered non-automatic while the stopcock is closed.

Size	Each	H.P. Based on Ordinary Tubular Boiler		H.P. Based on 30 Lbs. Water per H.P. per Hour		Pipe Connections Inches	GALLONS PER HOUR 1 TO 3-Ft. LIFT 60 TO 110 LBS. STEAM PRESSURE	
							Max.	Min.
O	\$15.00	3 to 6	4 to 8	1/4	60	35		
OO	16.00	4 to 8	6 to 12	3/8	80	45		
A	18.00	8 to 16	10 to 20	1/2	135	70		
AA	20.00	12 to 22	15 to 30	1/2	180	100		
B	25.00	17 to 32	22 to 45	3/4	260	140		
BB	30.00	20 to 45	25 to 60	3/4	360	180		
C	40.00	40 to 65	45 to 80	1	475	250		
CC	45.00	45 to 80	50 to 100	1	600	325		
D	55.00	50 to 100	60 to 135	1 1/4	800	425		
DD	60.00	75 to 135	85 to 165	1 1/4	1000	525		
E	75.00	100 to 180	125 to 235	1 1/2	1400	740		
EE	90.00	115 to 255	150 to 320	1 1/2	1900	850		
F	110.00	160 to 320	200 to 400	2	2400	1275		
FF	125.00	200 to 400	250 to 500	2	3000	1600		
GG	200.00	375 to 600	400 to 750	2 1/2	4200	2150		

## Repair Parts

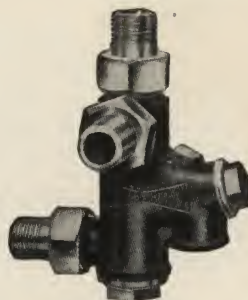
In ordering parts do not fail to give serial letter and number, which will be found on top of overflow. In referring to or ordering parts, designate them by letter or name.

Size of Injector.....	O	A	B
	OO	AA	BB
R—Steam Jet...each	\$ .25	\$ .35	\$ .45
S—Suction Jet...each	.25	.35	.45
Y—Delivery Jet...each	1.25	1.50	2.00
X—Coupling Nut...each	.25	.30	.40
V—Tail Pipe...each	.25	.30	.40
Z—Overflow Cap...each	.30	.40	.50
P—“ Valve...each	.40	.50	.60
N—“ Hinge...each	.10	.10	.15
O—Plug...each	.60	.80	1.00
Strainer...each	.40	.45	.50

Size of Injector.....	C	D	E	EE	F	FF	G
	CC	DD					GG
R—Steam Jet...each	\$ .55	\$ .65	\$ .75	\$ .75	\$ .85	\$1.00	\$2.00
S—Suction Jet...each	.55	.65	.75	.75	.85	1.00	3.00
Y—Delivery Jet...each	2.50	3.00	3.75	4.50	5.50	6.50	9.00
X—Coupling Nut...each	.50	.60	1.25	1.25	1.50	1.50	2.00
V—Tail Pipe...each	.50	.60	.80	.80	1.00	1.00	1.25
Z—Overflow Cap...each	.60	.70	.80	.80	.90	.90	1.50
P—“ Valve...each	.75	.90	1.00	1.10	1.25	1.25	1.75
N—“ Hinge...each	.15	.15	.20	.20	.20	.20	.30
O—Plug...each	1.25	1.50	1.75	1.75	2.00	2.00	4.00
Strainer...each	.55	.60	.75	.75	1.00	1.00	1.50

## Penberthy Automatic Injectors

## Special Connections



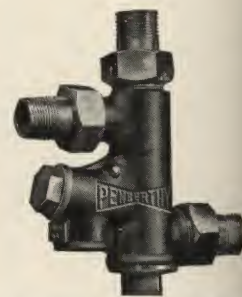
Stock Model  
No. 245-1, Left and Back



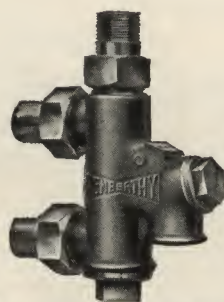
No. 246-1, Left and Right



No. 247-1, Right and Left



No. 240-1, Front and Back  
Universal Mode.



No. 244-1, Back and Back



No. 378-1, Right and Back

By reason of lack of space, or because the user wishes to have the overflow of the injector in a certain position, injectors with connections to suit such requirements are necessary. The styles illustrated are made in all sizes.

The style “left and right” is adapted for the right hand side of the boiler; the style “right and left” for the left hand.

The style “right and back” has the suction on the opposite side from that of the stock model. “Back and back” has both suction and delivery on the side opposite the overflow.

The terms “right and left,” “left and right,” etc., mean “suction on right and discharge on left side of injector,” and vice versa, with overflow facing front.

All orders will be filled with stock injector, unless the style is specified.

Sizes, capacities and prices of special connection injectors are the same as those of the stock injector.



## Penberthy XL-96 Improved Ejectors

Lifts 22 to 25 Feet  
Elevates 25 to 100 Feet  
Pressure 30 to 100 Pounds



The lifting and elevating power is so combined in the XL-96 Ejector as to make it unsurpassed by any device of its kind. The principle and power contained in so small, handy and economical an instrument, continually suggests new uses, which often demand that the tubes of the ejector be proportioned particularly for the service. The manufacturer is prepared to furnish special ejectors singularly efficient in the work for which they are designed.

No.	CAPACITY, GALLONS PER HOUR				VERTICAL LIFT	
	3-FOOT LIFT		50-Foot Elevation	25-foot Elevation	FEET	
	STEAM PRESSURE, POUNDS					
	20 to 40 or				25 to 40 or 75	
	40 to 65	65 to 100	40 to 65	40 to 65	40 to 75	to 100
1	240	235	120	180	23	20
2	500	450	250	375	25	22
3	840	700	420	625	25	22
4	1350	1300	650	950	25	22
5	1950	1850	975	1450	25	22
6	3500	3000	1750	2600	25	22
*7	5700	4350	2500	3750	25	22
*8	9500	8150	4750	7200	25	22
*9	13600	12400	6800	10200	25	22
*10	18400	17100	9200	13800	25	22

No.	Steam Connection Inches	Suction and Discharge Inches	PRICE, EACH	
			Brass	Iron Body Brass Jets
1	3/8	1/2	\$8.00	.....
2	1/2	3/4	10.00	.....
3	3/4	1	15.00	.....
4	1	1 1/4	20.00	.....
5	1 1/4	1 1/2	25.00	\$20.00
6	1 1/2	2	35.00	27.50
7	2	2 1/2	50.00	40.00
8	2 1/2	3	70.00	50.00
9	3	3 1/2	105.00	70.00
10	4	4	145.00	95.00

Sizes 5 and 6 will be sent in all brass, unless ordered with iron body and brass jets and steam connection.

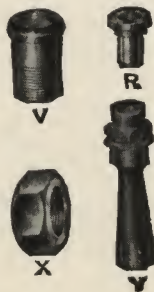
\*Unless ordered in brass, sizes 7 to 10 inclusive, will be shipped with iron body, brass jets and steam connection.

## Table Showing Size of Boilers Required for Ejectors

No. of Ejector.....	1, 2, 3	4, 5, 6	7, 8	9, 10
Size of Boiler.....h. p.	2 to 6	8 to 12	15 to 20	25 to 30

## Repair Parts

Size No.	PRICE, EACH				
	R-Stream Jet	Y-Del. Jet	V-Tail Pipe Brass	X-Coupling Nut Brass	Strainer
1	\$ .25	\$ .80	\$ .25	\$ .25	\$ .45
2	.35	1.00	.30	.30	.50
3	.45	1.25	.40	.40	.55
4	.55	1.50	.50	.50	.60
5	.60	1.75	.50	.50	.75
6	.80	2.50	.60	.60	1.00
7	1.00	4.00	.80	1.25	1.50
8	1.25	6.00	1.00	1.50	....
9	1.50	8.00	1.00	1.50	....
10	2.00	10.00	1.25	2.00	....



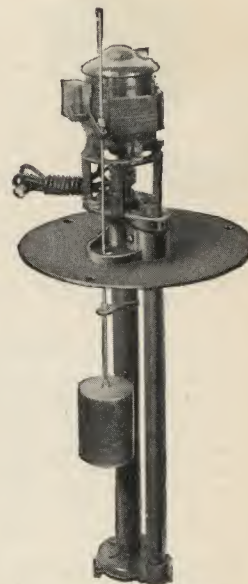
## Special Acid Resisting or All Iron Ejectors

Furnished on special order; prices on application.

## Little Giant Automatic Cellar Drainers



With Tripod Legs



With Floor Plate

Motor is of the repulsion induction type. It is full 1/4 h.p. efficiently designed, and never loaded to full capacity. Switch is simple and positive. Its construction guards against petty troubles. Flexible coupling connects motor to pump shaft—just the same as larger Chicago pumps.

The shaft is covered from top to bottom. It is sturdy and is ground to mirror-like finish. Hanger pipe supports weight of pump casing and covers shaft. Tripod pipe-legs insure proper balance when pump is set on uneven surface. They are easily adjusted or removed. (Pump can also be furnished with floor plate.)

Bronze impeller is of the non-overloading type. It can be raised or lowered in pump casing by a simple operation known as micrometer adjustment.

Discharge pipe 1 1/4 inches is furnished as standard equipment. Supported at top and bottom, it adds to the rigidity and smooth operation of pump.

Motor 1/4 h.p., repulsion induction single phase, 60 cycle, 110 or 220 volt, 1750 r.p.m.; 1/4 h.p., repulsion induction single phase, 50 cycle, 110 or 220 volt, 1425 r.p.m.; 1/4 h.p., repulsion induction single phase, 25 cycle, 110 or 220 volt, 1425 r.p.m.; 1/4 h.p., direct current, 110 or 220 volt, 1750 r.p.m.

Double break type switch is mounted right on motor. It is positive and simple in operation.

Standard equipment includes pipe legs to support pump, or floor plate on which pump may rest.

A special, heavy electric cord, 10 feet long, with plug, is attached to switch so that the pump can be easily and quickly connected to house current.

1750 R.P.M.				1450 R.P.M.			
(D.C. or 60 Cycle A.C.)				(25 or 50 Cycle A.C.)			
Cap. G.P.M.	Head Feet	Cap. G.P.M.	Head Feet	Cap. G.P.M.	Head Feet	Cap. G.P.M.	Head Feet
10	22	35	14	10	17	35	10
20	20	40	12	20	15	40	7
25	18	45	8	25	15	..	..
30	16	50	5	30	12	..	..

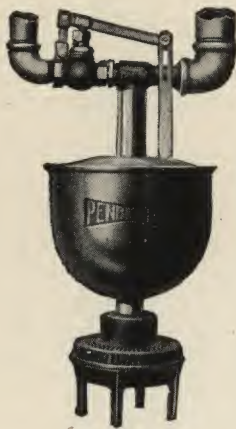
Prices upon application.



## Penberthy Automatic Cellar Drainers



Model R



Model L

## Model R

No.	Work- ing Head Ft.	MAXIMUM NET CAPACITIES FROM SUMP AT 10 TO 100 POUNDS WATER PRESSURE GALLONS PER HOUR									Price Each
		10	15	20	25	30	40	60	80	100	
1	3	80	210	300	340	400	510	700	720	700	\$25.00
1	6	...	90	140	240	300	390	570	670	690	25.00
1	9	...	...	90	150	210	330	480	620	660	25.00
1	12	...	...	...	100	150	220	390	550	630	25.00
1	15	...	...	...	...	90	190	300	450	600	25.00
1	18	...	...	...	...	...	120	250	320	550	25.00
2	3	190	390	550	620	750	910	1180	1240	1220	40.00
2	6	...	210	340	420	600	750	1020	1140	1200	40.00
2	9	...	...	210	300	380	540	900	1090	1150	40.00
2	12	...	...	...	210	300	420	780	1020	1110	40.00
2	15	...	...	...	...	210	370	570	940	1050	40.00
2	18	...	...	...	...	...	300	510	850	970	40.00

No. 1 has  $\frac{1}{2}$ -inch supply and 1-inch discharge; No. 2 has  $\frac{3}{4}$ -inch supply and  $1\frac{1}{4}$ -inch discharge.

The Model R drainer requires 5-pound water pressure or more for each 1 foot of elevation while the low pressure drainer will work on 2-pound to 4-pound per foot of elevation which can be supplied.

## Model L

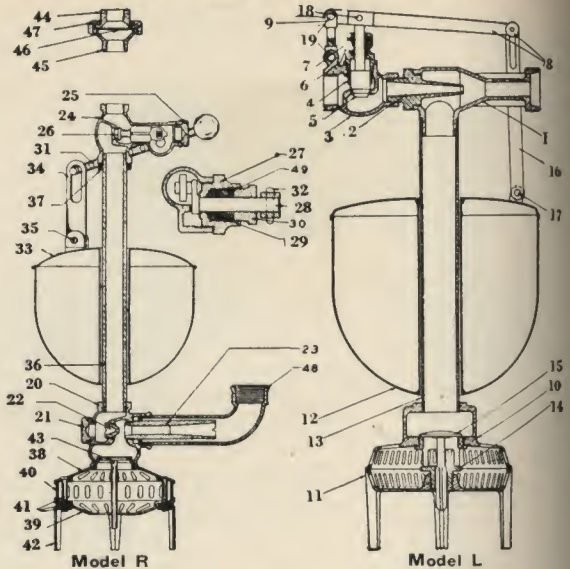
No.	Supply Pipe In.	Suction & Dis- charge	Work- ing Head Ft.	ACTUAL CAPACITY WILL ELEVATE TAKEN FROM SUMP GALLONS PER HOUR				Price Each
				25	40	60	80	
3	1	$1\frac{1}{2}$	3	660	1100	1440	1650	\$55.00
3	1	$1\frac{1}{2}$	6	520	860	1230	1440	55.00
3	1	$1\frac{1}{2}$	9	...	720	1050	1320	55.00
3	1	$1\frac{1}{2}$	12	...	...	840	1040	55.00
3	1	$1\frac{1}{2}$	18	...	...	...	760	55.00
4	$1\frac{1}{4}$	2	3	960	1600	2020	2400	80.00
4	$1\frac{1}{4}$	2	6	760	1240	1880	1980	80.00
4	$1\frac{1}{4}$	2	9	...	1040	1600	1800	80.00
4	$1\frac{1}{4}$	2	12	...	...	1280	1440	80.00
4	$1\frac{1}{4}$	2	18	...	...	...	1050	80.00
5	$1\frac{1}{2}$	$2\frac{1}{2}$	3	1280	2100	2700	3200	110.00
5	$1\frac{1}{2}$	$2\frac{1}{2}$	6	1000	1620	2300	2820	110.00
5	$1\frac{1}{2}$	$2\frac{1}{2}$	9	...	1260	1960	2600	110.00
5	$1\frac{1}{2}$	$2\frac{1}{2}$	12	...	...	1560	2060	110.00
5	$1\frac{1}{2}$	$2\frac{1}{2}$	18	...	...	...	1500	110.00

The above capacities are the actual capacities of water taken from sump and not the combined discharge of operating and drainage water. For higher elevations than shown above, special drainers can be made.

## Non-Automatic

Capacities, pipe connections, etc., same as other models listed above.

No.	MODEL L		MODEL R		
	1	2	4	5	
Price.....each	\$15.00	\$25.00	\$35.00	\$50.00	\$70.00

Repairs for Penberthy Cellar Drainers  
Automatic and Non-Automatic

## Model R

No.	Name of Part	PRICE, EACH	
		No. 1	No. 2
20	Ejector Body.....	\$4.50	\$6.75
21	" " Plug.....	.50	.50
*22	Water Jet.....	.60	.70
*23	Delivery Jet.....	1.75	2.60
24	Valve Body.....	4.50	6.75
25	" " Plug.....	.50	.50
26	" Disc.....	1.20	1.20
27	" Bonnet.....	.80	.80
28	" Stem.....	1.20	1.20
29	" Packing.....	.10	.10
30	" " Gland.....	.60	.60
31	Lever.....	1.80	1.80
32	" Pin.....	...	...
33	Float.....	7.00	7.00
34	Hanger.....	.40	.40
35	" Screw and Lock.....	.15	.15
36	Guide Tube.....	3.00	3.00
37	" Washer.....	.10	.10
38	Strainer (Upper).....	2.20	2.20
39	" (Lower).....	2.20	2.20
40	" Spacer.....	.60	.60
41	" Leg Bolt, Nut, and Lock Washer	.15	.15
42	" ".....	.20	.20
43	Foot Valve.....	1.00	1.00
44	Strainer Union (Male Seat).....	1.00	1.50
45	" " (Female Seat).....	1.00	1.50
46	" " Screen.....	.15	.15
47	" " Nut.....	1.00	1.00
48	Nipple.....	3.00	5.00

\*If steam is used, specify range of operating pressure.

## Model L

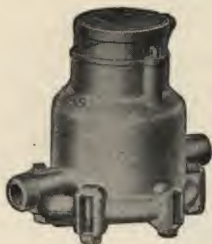
No.	Name of Part	PRICE, EACH		
		No. 3	No. 4	No. 5
1	Ejector Body.....	\$6.00	\$8.00	\$12.00
2	Water Jet.....	2.00	3.00	4.50
3	Balance Valve Body.....	6.00	8.00	12.00
4	" " Bonnet.....	2.00	3.20	4.50
5	" " Stem.....	1.50	2.00	3.00
6	Packing Nut.....	.40	.60	1.00
7	" Gland.....	.30	.50	1.00
8	Valve Lever.....	2.50	3.50	5.00
9	" Yoke.....	.60	.80	1.00
10	Strainer—Upper Half.....	1.60	3.00	3.00
11	" Lower.....	1.20	2.50	2.50
12	Float.....	8.00	10.00	12.00
13	Suction Tube.....	4.50	6.50	9.00
14	Foot Valve Body.....	2.00	4.00	4.00
15	" ".....	1.00	2.00	2.00
16	Slotted Float Links.....	.50	.60	1.00
17	Float Pin—Complete.....	.20	.40	.40
18	Lever.....	.15	.30	.30
19	Yoke " (2).....	.20	.40	.40

When ordering parts give number and name of each part and size of drainer for which repairs are ordered. Size number is marked on upper valve body, on top of drainer.



## Hersey Disc Water Meters

Model F



The Hersey Disc Meter, Model F, is a meter of the positive type. The piston is of hard rubber, re-enforced by a steel plate and is made in the form of a disc which nutates in a measuring chamber conforming thereto. The case throughout is made of bronze, except that for cold climates where the meter may be exposed to frost, the Hersey Lined Antifrost Bottom is substituted for the bronze bottom. Model F is the standard Hersey Disc Meter in  $\frac{5}{8}$ -inch,  $\frac{3}{4}$ -inch and 1-inch sizes and is adapted for use on almost any kind of service.

*Capacity		DIMENSIONS, INCHES			WEIGHT, LBS.		Price	Price
Size per Minute	Gallons	Height	Width	Length	Net	Gross	Meter Each	Cons. per Pair
$\frac{5}{8}$	20	6 $\frac{3}{8}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	8	12	\$20.00	\$1.00
$\frac{3}{4}$	34	7	7	9	12	19	30.00	1.50
1	53	7 $\frac{1}{4}$	8 $\frac{1}{4}$	10 $\frac{3}{4}$	16	26	44.00	2.20

Model D



The Hersey Disc Meter, Model D, is of the same type as Model F, has re-enforced piston and operates in the same manner. It differs principally in the shape of the external case. All water ways are amply large to insure the least reduction of pressure that it is possible to obtain in a meter of the positive type. Model D is made in one uniform model in sizes from 1 $\frac{1}{4}$  inches to 6 inches, inclusive. The adaptability of the Model D meter to a wide range of requirements makes its use almost universal. All sizes from 1 $\frac{1}{4}$ -inch to 6-inch, inclusive, are made with heavy galvanized cast iron cases; 1 $\frac{1}{4}$ -inch, 1 $\frac{1}{2}$ -inch and 2-inch have female threads, 3-inch, 4-inch and 6-inch have standard flanges.

*Capacity		DIMENSIONS, INCHES			WEIGHT, LBS.		Price	Price
Size per Minute	Gallons	Height	Width	Length	Net	Gross	Meter Each	Cons. per Pair
1 $\frac{1}{4}$	75	8 $\frac{1}{4}$	8 $\frac{3}{8}$	11 $\frac{1}{4}$	28	39	\$60.00	\$3.00
1 $\frac{1}{2}$	100	9 $\frac{1}{8}$	10 $\frac{1}{2}$	12 $\frac{5}{8}$	45	63	80.00	4.00
2	160	10 $\frac{1}{4}$	12 $\frac{1}{8}$	15 $\frac{1}{4}$	73	89	120.00	6.00
3	315	16 $\frac{5}{8}$	18	24	250	287	240.00	No Charge
4	500	19 $\frac{3}{4}$	22	29	440	500	400.00	
6	1000	25	27 $\frac{3}{4}$	36 $\frac{1}{2}$	800	885	800.00	

\*Safe maximum capacities.

All prices are subject to change without notice.

## Brass Water Gauges

Iron Wheels

No. 624, Low Pressure

No. 610, Medium, for 175 Pounds  
Steam Working Pressure



No. 624

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$
Size of Glass.....inches	$\frac{5}{8}$ x12	$\frac{3}{4}$ x16
Center to Center of Cocks.....inches	13 $\frac{5}{8}$	18 $\frac{1}{4}$
Price, No. 610		
Finished.....each	\$5.50	\$3.00
Price, No. 624		
Rough, Bronzed		
.....each	3.25	.....



No. 610

## No. 613 Extra Heavy Water Gauges

With Iron Wheels



Tapped for  $\frac{3}{4}$ -inch drain and the glass can be replaced through the cap at the top while the boiler is under pressure by closing both valves.

Has four guards.

Size,  $\frac{3}{4}$  inch.

Size of glass,  $\frac{5}{8}$ x16 inches.

Distance from center to center of cocks, 19 $\frac{1}{4}$  inches.

Price, No. 613, Finished.....each \$20.00

## No. 615 Extra Heavy Water Gauges

With Levers and Chain

Tapped for  $\frac{3}{4}$ -inch drain and glass can be replaced through cap at top while boiler is under pressure by closing both valves. Furnished complete with lever chain that drops 12 $\frac{1}{2}$  feet below bottom valve. When valves are open, the levers stand in a horizontal position. To close, pull down the right side of levers to a 45 degree angle.

Has four guards.

Size,  $\frac{3}{4}$  inch.

Size of glass,  $\frac{5}{8}$ x16 inches.

Distance from center to center of cocks, 19 $\frac{1}{4}$  inches.

Price, No. 615, Finished.....each \$35.00



## No. K375 Detroit Expansion Tank Water Gauges



Has bronzed body.

With 2 guards.

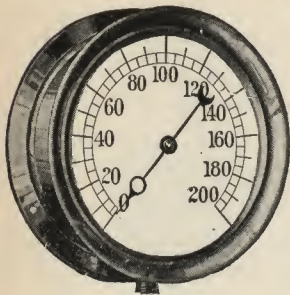
Glass,  $\frac{5}{8}$ x12 inches;  $\frac{1}{2}$ -inch connection.

Price, No. K375.....each \$2.60



## Pressure Gauges

## Single Spring



The standard type of gauge for steam, water, air, gas or any pressure medium which will not deteriorate brass.

For any standard graduation up to 600 pounds and at extra charge for higher pressures up to 1000 pounds.

Should be graduated to double the actual working pressure.

Unless otherwise specified, gauges will be furnished: sizes 2 and 2½-inch with ½-inch male bottom connection;

other sizes, ¼-inch male bottom connection. No extra charge for back connection.

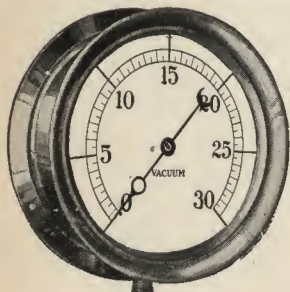
Prices include a T-handle cock for sizes 3½ to 6-inch inclusive; a small union cock for sizes 6¾ to 10-inch, and a large union cock for sizes 12-inch and larger.

## PRICE, EACH

Size Dial In.	IRON CASE		BRASS CASE		DEEP CASE, O. G.	
	Brass Ring	N. P. Ring	Brass Case	N. P. Case	OR OCT. RING Brass	N. P.
16	\$90.00	\$92.00	\$125.00	\$135.00	.....	.....
12	50.00	51.50	75.00	79.00	\$80.00	\$84.00
10	32.00	33.00	40.00	43.00	44.00	47.00
8½	22.00	22.75	30.00	32.50	33.50	36.00
6¾	16.00	16.60	20.00	22.00	23.00	25.00
6	13.00	13.50	16.00	17.50	18.50	20.00
5½	10.00	10.25	12.00	13.25	13.75	15.00
5	8.00	8.20	11.00	12.00	12.50	13.50
4½	8.00	8.20	10.00	11.00	11.50	12.50
3½	7.00	7.18	9.00	9.75	10.25	11.00
3	6.00	6.15	8.00	8.60	9.25	9.75
2½	6.00	6.15	8.00	8.60	9.25	9.75
2	6.00	6.15	8.00	8.60	9.25	9.75

## Vacuum Gauges

## Single Spring



For the indication of vacuum.

These gauges are graduated from an open mercury column and are warranted to be perfectly accurate.

Hand-made spring of solid drawn seamless tube. Non-corrosive metal movement with machine cut uniform gearing. Carefully inspected, adjusted and tested. Guaranteed for long and continued accurate service.

Unless otherwise specified, gauges will be furnished, sizes 2 and 2½-inch with ½-inch male bottom connection; other sizes, ¼-inch male bottom connection. No extra charge for back connection.

Prices include a T-handle cock for sizes 3½ to 6 inches inclusive; a small union cock for sizes 6¾ to 10 inches, and a large union cock for sizes 12-inch and larger.

## PRICE, EACH

Size Dial In.	IRON CASE		BRASS CASE		DEEP CASE, O. G.	
	Brass Ring	N. P. Ring	Brass Case	N. P. Case	OR OCT. RING Brass	N. P.
16	\$90.00	\$92.00	\$125.00	\$135.00	.....	.....
12	50.00	51.50	75.00	79.00	\$80.00	\$84.00
10	32.00	33.00	40.00	43.00	44.00	47.00
8½	22.00	22.75	30.00	32.50	33.50	36.00
6¾	16.00	16.60	20.00	22.00	23.00	25.00
6	13.00	13.50	16.00	17.50	18.50	20.00
5½	10.00	10.25	12.00	13.25	13.75	15.00
5	8.00	8.20	11.00	12.00	12.50	13.50
4½	8.00	8.20	10.00	11.00	11.50	12.50
3½	7.00	7.18	9.00	9.75	10.25	11.00
3	6.00	6.15	8.00	8.60	9.25	9.75
2½	6.00	6.15	8.00	8.60	9.25	9.75
2	6.00	6.15	8.00	8.60	9.25	9.75

## Compound Pressure and Vacuum Gauges

## Single Spring



For use where either pressure or vacuum is to be indicated.

Standard graduation is 15 pounds pressure and 30 inches vacuum. Can be furnished for pressures up to 600 pounds.

Hand made spring of solid drawn seamless tube. Non-corrosive metal movement with machine cut gearing.

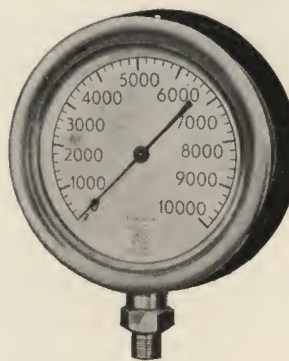
Unless otherwise specified, sizes 2 and 2½-inch furnished with ½-inch male bottom connection; other sizes

¼-inch male bottom connection. Back connection optional. Prices include a T-handle cock for sizes 3½ to 6 inches inclusive; a small union cock for sizes 6¾ to 10 inches, and a large union cock for 12 inches.

## PRICE, EACH

Size Dial In.	IRON CASE		BRASS CASE		DEEP CASE, O. G.	
	Brass Ring	N. P. Ring	Brass Case	N. P. Case	OR OCT. RING Brass	N. P.
12	\$60.00	\$61.50	\$80.00	\$84.00	\$85.00	\$89.00
10	40.00	41.00	50.00	53.00	54.00	57.00
8½	30.00	30.75	40.00	42.50	43.50	46.00
6¾	20.00	20.60	25.00	27.00	28.00	30.00
6	16.00	16.50	20.00	21.50	23.00	24.50
5½	14.00	14.25	16.00	17.25	18.50	19.75
5	14.00	14.25	16.00	17.25	18.50	19.75
4½	12.00	12.20	14.00	15.00	16.00	17.00
3½	10.00	10.18	12.00	12.75	13.75	14.50
3	9.00	9.15	11.00	11.60	12.25	12.75
2½	9.00	9.15	11.00	11.60	12.25	12.75
2	9.00	9.15	11.00	11.60	12.25	12.75

## Ashcroft American Hydraulic Gauges



Type 1056 is the standard Hydraulic Gauge for indicating pressures up to 25,000 pounds.

Spring is bored out of solid chrome vanadium steel. Drop forged steel socket.

Type 1058 is similar to Type 1056, except that it is fitted with a hinged ring and a lock and key. This type has a maximum or tell-tale pointer which shows the highest pressure reached.

Standard connection, ½ inch male standard pipe thread from bottom of case. Back connection supplied to order. No cock furnished.

## Standard Ranges

Total Graduations Pounds	Figure Intervals Pounds	Intermediate Graduations Pounds	Total Graduations Pounds	Figure Intervals Pounds	Intermediate Graduations Pounds
0-1000	100	10	0-10000	1000	200
0-1500	300	50	0-15000	3000	200
0-2000	200	20	0-20000	2000	250
0-3000	500	100	0-25000	5000	500
0-5000	500	100	.....	.....	.....

## Type 1056, Each

Size Dial Inches	IRON CASE		BRASS CASE		N. P. CASE	
	Brass Ring	N. P. Ring	Brass Case	N. P. Case	Brass Case	N. P. Case
12	\$110.00	\$111.50	\$125.00	\$129.00	\$103.00	\$107.00
10	90.00	91.00	100.00	103.00	82.50	85.50
8½	70.00	70.75	80.00	82.50	65.00	67.50
6	35.00	35.50	40.00	41.50	36.00	37.50
5	30.00	30.50	35.00	36.00	30.00	31.00
4½	25.00	25.50	30.00	31.00	25.00	26.00

Type 1052, extra charge, \$5.00 on gauges over 5 inches. Can be furnished chromium-plated or with chromium plated ring. Prices on request.



## Altitude Gauges

## Single Spring

The black hand indicates the height of water. The red hand is independent from the gauge tube and set by the user at the proper altitude to be maintained.

Standard graduation is 70 feet. Can be furnished for any required altitude.

Should be graduated to double the maximum altitude to be registered.

Hand-made spring of solid drawn seamless tube. Non-corrosive metal movement with machine cut uniform gearing. Carefully inspected, adjusted and tested.

Unless otherwise specified, gauges will be furnished 1/4-inch male bottom connection. No extra charge for back connection.

This instrument can be supplied with U. S. Navy specification case, interior and test.

Prices include a T-handle cock for sizes 3 1/2 to 6 inches inclusive; a small union cock for sizes 6 3/4 to 10 inches, and a large union cock for 12 inch.



## No. 32A Air Compressor Gauges

This gauge is 2 1/2-inch size and is made in pressures up to 300 pounds per square inch.

The case is heavy pressed steel with black enamel finish. Can be nickel-plated if desired.

The ring is nickel-plated regularly but can be made with polished brass or other finish if desired.

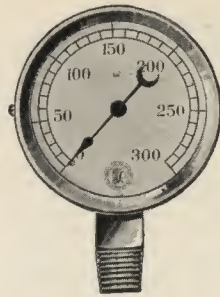
It is designed for hard work on air tanks and compressors.

Will stand pulsation stress and mechanical vibration without injury.

Connection: 1/4-inch standard pipe thread fitted with square boss above thread.

Standard package, 100 gauges.

Price No. 32A . . . . . each \$1.00



## American Steam Gauge Syphons

Type 1032 is a ball syphon without cock, while Type 1028 is with cock and test gauge connection.

Both types are furnished in brass.



Type 1032

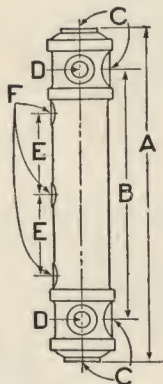


Type 1028

Type	Size Connections Inches	Price Each Brass
1032	3/8x3/4	\$2.25
1028	3/8x3/4x1/4	3.25

## Water Columns

For 250 Pounds Steam Working Pressure



Dimensions

Body Complete with Trimmings

When ordered complete, trimmings for 175 pounds working pressure will be furnished, unless otherwise specified.

No.	Lgth. Over All In.	CENTER TO CENTER CONNECTIONS, IN. Boiler and Water Gauge	Gauge Cock	Size CONNECTIONS, IN. Boiler and End	Water Gauge	Gauge Cock Tappings	No. Gauge	Body Only Price Each
1	13 3/8	10	3 3/8	1 1/2	1 1/2	3 3/8	2	\$2.75
2	16 3/4	12 1/2	3 3/4	3/4	1 1/2	1 1/2	3	4.00
3	18 7/8	14	4 1/2	1	3/4	1 1/2	3	6.00
4	23 3/8	18	4	1 1/4	3/4	3/4	3	8.00

## Ashcroft American Steam Gauge Syphons

## Straight

Price, Type PI, Iron . . ea. \$.25

Price, Type PB, Brass . ea. 1.00

Price, Type PN, N.P. . ea. 1.50

## Angle

Price, Type PF, Iron . . ea. \$.25

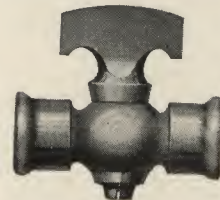
Price, Type PC, Brass . ea. 1.00

Price, Type PP, N.P. . ea. 1.50



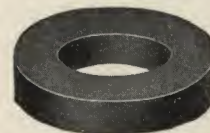
## Tee Handle Gauge Cocks

## Female Both Ends



No.	Size In.	Price Each	No.	Size In.	Price Each
37	1/8	\$.65	39	3/8	\$.85
38	1/4	.70	39 1/2	1/2	1.10

## Rubber Gauge Glass Washers



No. 2011 Square

Size In.	PER DOZ. Square	PER DOZ. Round
1/2	\$.36	\$.48
5/8	.36	.54
3/4	.36	.60



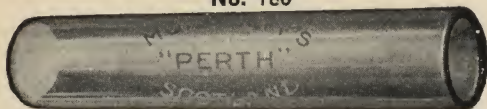
No. 689 Round

## Chesterton Gauge Glass Cutters



Nickel-Plated . . . . . each \$2.00

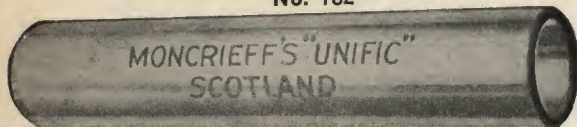


**Moncrieff's Perth Scotch Gauge Glasses**For 150 Pounds Steam Pressure  
No. 780

All glasses are carefully packed, 6 in a package.

Length Inches	PRICE, PER DOZEN—						
	EXTERNAL DIAMETER, INCHES						
	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2
8	\$1.92	\$2.52	\$3.00	\$4.08	\$4.92	\$8.16	\$14.64
9	2.04	2.76	3.36	4.68	5.52	9.24	16.44
10	2.28	3.00	3.60	5.04	6.12	10.20	18.36
11	2.64	3.24	3.96	5.64	6.72	11.16	20.16
12	2.76	3.60	4.32	6.12	7.32	12.24	21.96
13	3.00	3.84	4.80	6.60	7.92	13.20	23.76
14	3.24	4.20	5.16	7.08	8.52	14.28	25.56
15	3.48	4.44	5.52	7.56	9.12	15.24	27.48
16	3.72	4.80	5.88	8.16	9.72	16.32	29.28
17	3.96	5.04	6.24	8.64	10.32	17.28	31.08
18	4.20	5.40	6.60	9.12	10.92	18.36	32.88
19	4.44	5.64	7.08	9.60	11.52	19.32	34.68
20	4.68	6.00	7.44	10.20	12.12	20.28	36.60
21	4.80	6.36	7.80	10.68	12.84	21.36	38.40
22	5.04	6.60	8.16	11.16	13.44	22.44	40.20
23	5.28	6.96	8.52	11.64	14.04	23.40	42.00
24	5.52	7.20	8.88	12.12	14.64	24.36	43.80
30	6.96	9.00	11.16	15.24	18.24	30.60	54.96
36	8.28	10.80	13.44	18.24	21.96	36.72	65.88
42	9.72	12.60	15.72	21.36	25.68	42.84	76.92
48	11.04	14.52	18.00	24.36	29.16	48.96	87.84
54	12.48	16.32	20.28	27.48	33.00	55.08	98.88
60	13.80	18.12	22.56	30.48	36.48	61.20	109.80
66	15.24	20.04	24.84	33.48	40.32	67.32	120.84
72	16.56	21.84	27.12	36.48	43.80	73.44	131.76

Lengths not regular are charged at the price of next longer tubes of same diameter.

**Moncrieff's Unific Scotch Gauge Glasses**  
No. 782

Made to withstand up to 500 pounds steam pressure. Will remain clean for a long time under high steam pressures.

Lengths not regular charged at price of next larger tubes of same diameter. Glasses carefully packed. Not responsible for breakage.

Lgth In.	PRICE, PER DOZEN—						
	EXTERNAL DIAMETER, INCHES						
	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2
8	\$2.64	\$3.36	\$4.68	\$6.12	\$7.92	\$12.24	\$21.96
9	2.88	3.72	5.28	6.72	8.64	13.80	24.72
10	3.12	4.08	5.76	7.32	9.24	15.24	27.48
11	3.36	4.56	6.24	7.92	10.08	16.80	30.12
12	3.72	4.92	6.72	8.64	11.04	18.36	32.88
13	3.96	5.28	7.20	9.24	11.88	19.80	35.64
14	4.32	5.76	7.80	9.96	12.84	21.36	38.40
15	4.68	6.12	8.40	10.68	13.80	22.92	41.16
16	4.92	6.48	9.00	11.40	14.64	24.36	43.80
17	5.28	6.96	9.48	12.12	15.60	25.92	46.56
18	5.52	7.32	10.08	12.84	16.44	27.48	49.32
19	5.88	7.80	10.56	13.56	17.40	28.92	52.08
20	6.12	8.16	11.16	14.28	18.36	30.48	54.84
21	6.48	8.64	11.76	15.00	19.20	32.04	57.60
22	6.72	9.00	12.36	15.72	20.16	33.48	60.24
23	7.08	9.36	12.84	16.44	21.00	35.04	63.00
24	7.44	9.84	13.44	17.28	22.08	36.72	65.76
30	9.36	12.36	16.80	21.60	27.60	45.96	82.20
36	11.16	14.76	20.16	25.92	33.12	55.08	98.64
42	13.08	17.28	23.52	30.24	38.64	64.32	115.08
48	14.88	19.68	26.88	34.56	44.16	73.44	131.52
54	16.80	22.20	30.24	38.88	49.68	82.68	147.96
60	18.60	24.60	33.60	43.20	55.20	91.80	164.40
66	20.52	27.12	36.96	47.52	60.72	101.04	180.84
72	22.32	29.52	40.32	51.84	66.24	110.16	197.28

**No. 730 Compression Gauge Cocks**

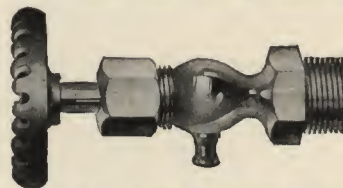
Short Pattern

For 125 Pounds Steam  
Working PressureSize  
Inches  
3/8  
1/2Price  
Each  
\$.95  
1.00**No. 732 Compression Gauge Cocks**

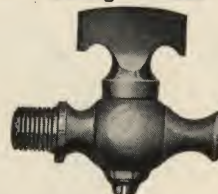
Long Pattern

For 125 Pounds Steam  
Working PressureSize  
Inches  
1/2  
3/4Price  
Each  
\$1.20  
1.35**No. 734 Compression Gauge Cocks**

With Stuffing Box

For 175 Pounds Steam  
Working PressureSize  
Inches  
3/8  
1/2  
3/4Price  
Each  
\$1.20  
1.30  
1.45**No. 736 Compression Gauge Cocks**

With Stuffing Box

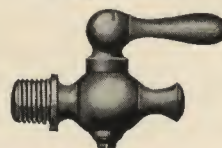
For 250 Pounds Steam  
Working PressureSize  
Inches  
1/2  
3/4Price  
Each  
\$1.50  
1.70**Tee Handle Air Cocks**  
Straight Nose

Nos. 6 and 7 have round shoulders as shown in illustration, other numbers have a hexagon shoulder.

No.	Size Inches	Price Each	No.	Size Inches	Price Each
6	1/8	\$.40	10	3/4	\$.90
7	1/4	.45	63TH	1/8	.45
8	3/8	.50	64TH	1/4	.50
9	1/2	.60	.....	..	...

**Lever Handle Air Cocks**

Straight Nose



Nos. 12 and 13 have round shoulders as shown in illustration, other numbers have a hexagon shoulder.

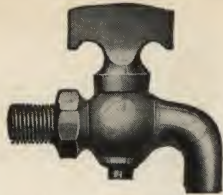
No.	Size Inches	Price Each	No.	Size Inches	Price Each
12	1/8	\$.55	16	3/4	\$1.15
13	1/4	.60	63LH	1/8	.60
14	3/8	.65	64LH	1/4	.65
15	1/2	.75	.....	..	...



## Tee Handle Air Cocks

## Bibb Nose

No.	Size In.	Price Each	No.	Size In.	Price Each
26	1/8	\$ .70	28	3/8	\$ .90
27	1/4	.80	33	1/2	1.00



For spring key and washer, add 10 cents.

## Tee Handle Air Cocks

## Male Both Ends

No.	Size In.	Price Each	No.	Size In.	Price Each
18	1/8	\$ .55	20	3/8	\$ .75
19	1/4	.65	21	1/2	.90



## Tee Handle Air Cocks

## Female Both Ends

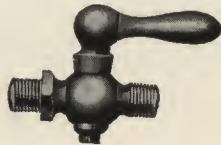
No.	Size In.	Price Each	No.	Size In.	Price Each
37	1/8	\$ .65	39	3/8	\$ .85
38	1/4	.70	39 1/2	1/2	1.10



## Lever Handle Air Cocks

## Male Both Ends

No.	Size In.	Price Each	No.	Size In.	Price Each
22	1/8	\$ .70	24	3/8	\$ .90
23	1/4	.80	25	1/2	1.05

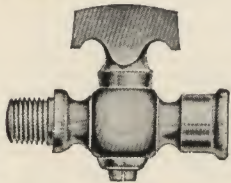


For spring key and washer, add 10 cents.

## Tee Handle Air Cocks

## Male and Female Ends

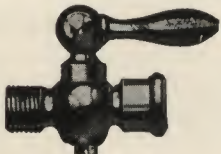
No.	Each	Size In.	No.	Each	Size In.
40	\$ .75	1/8	42	\$ .90	3/8
41	.80	1/4	42 1/2	1.15	1/2



## Lever Handle Air Cocks

## Male and Female Ends

No.	Size In.	Price Each	No.	Size In.	Price Each
46	1/8	\$ .90	48	3/8	\$ 1.05
47	1/4	.95	48 1/2	1/2	1.30



For spring key and washer, add 10 cents.

## No. 212 Jenkins Diamond Steam Traps

Adapted for use on steam-heating coils, steam jackets and kettles, heaters and other places where there is a moderate amount of condensation which it is desired to remove without waste of steam.

Sizes.....	1/2	3/4
Price, No. 212..each	\$7.00	\$8.00
Plug and Screw..each	1.60	2.00
Cap.....each	1.50	1.80



## Cast Brass Garden Hose Couplings

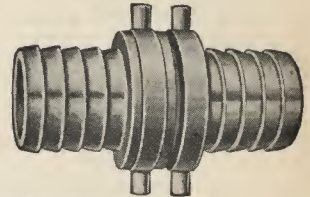


Size, In.	Per Doz.
3/8	.....
1/2	.....
5/8	.....
3/4	.....
1	.....

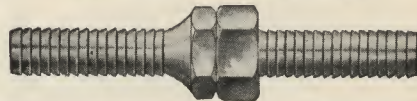
\*Hose thread furnished unless otherwise ordered.

## Water Hose Couplings

Size Inches	Per Dozen	Size Inches	Per Dozen
1 1/4	\$10.00	3	\$75.00
1 1/2	14.00	3 1/2	120.00
2	24.00	4	150.00
2 1/2	48.00	.....	.....



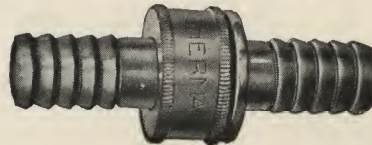
## Steam Hose Couplings



Always furnished with iron pipe thread.

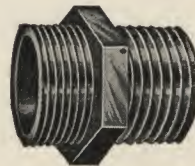
Size In.	Per Dozen	Lgth. Tail In.	Size In.	Per Dozen	Lgth. Tail In.	Size In.	Per Dozen	Lgth. Tail In.
1/2	\$15.00	2 1/2	1 1/4	\$24.00	3 1/2	2 1/2	\$72.00	5
3/4	15.00	3	1 1/2	30.00	4	.....	.....	.....
1	18.00	3 1/4	2	42.00	4 1/4	.....	.....	.....

## Wrought Brass Garden Hose Couplings

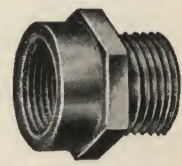


Size.....inches	3/8	1/2	5/8	3/4	1
Hose Couplings...per dozen	.....	.....	.....	.....	.....

## Hose Nipples



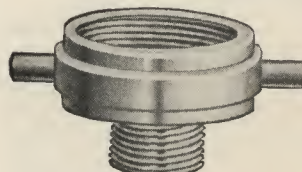
Male



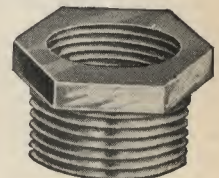
Male and Female

Size....in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Per Doz.	\$3.50	3.50	5.00	9.00	10.00	14.00	28.00

## Hose Reducers and Bushings



Reducer

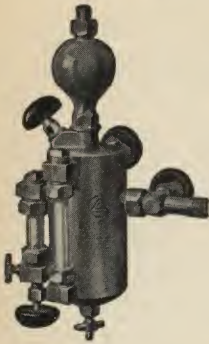


Bushing

Size Inches	Per Dozen	Size Inches	Per Dozen	Size Inches	Per Dozen
3/4 x 1/2	\$6.50	1 1/2 x 1 1/4	\$12.00	2 1/2 x 1 1/4	\$23.00
1 x 1/2	6.50	2 x 3/4	13.00	2 1/2 x 1 1/2	24.00
1 x 3/4	6.50	2 x 1	14.00	2 1/2 x 2	26.00
1 1/4 x 3/4	8.00	2 x 1 1/4	16.00	3 x 2	30.00
1 1/4 x 1	10.00	2 x 1 1/2	18.00	3 x 2 1/2	36.00
1 1/2 x 3/4	11.50	2 1/2 x 3/4	20.00	.....	.....
1 1/2 x 1	11.50	2 1/2 x 1	22.00	.....	.....



### Detroit Improved Standard Double Connection Lubricators



For use on all kinds of reciprocating steam engines, steam pumps, etc.

Installed with both connections between the boiler and throttle.

Finished in polished brass or nickel-plated.

Capacity Pints	Pipe Thread on Support Arm Inches	Capacity Pints	Pipe Thread on Support Arm Inches
1/3	1/2	2	1/2
1/2	1/2	4	3/4
1	1/2	..	..

Prices upon application.

### Detroit Improved Standard Single Connection Lubricators

For use on all kinds of reciprocating engines, steam engines, steam pumps, etc., where conditions do not permit the installation of a double connection lubricator.

Connected to the steam pipe either above or below the throttle or into the steam chest direct.

Finished in polished brass or nickel-plated.

Capacity Pints	Pipe Thread on Support Arm Inches	Capacity Pints	Pipe Thread on Support Arm Inches
1/3	1/2	1	1/2
1/2	1/2	2	1/2

Prices upon application.



### Detroit Glass Body Oil Cups

For use on bearings of all kinds. Locking wing presses against knurled adjusting nut. Filling cover is provided with a spring that instantly snaps back when released.



No.	O. D. Glass In.	Ht. Glass In.	Cap. Oz.	I. P. Thread In.	Pol. Brass	N. P.
400	1 1/4	1 1/8	5/8	1/8	\$ .80	\$ .95
401	1 1/2	1 3/8	1 1/8	1/4	1.00	1.20
401 1/2	1 3/4	1 5/8	1 1/2	1/4	1.25	1.50
402	2	1 7/8	2 1/2	3/8	1.50	1.75
403	2 1/4	2 1/8	4	3/8	1.90	2.20
404	2 1/2	2 3/8	5	3/8	2.40	2.75
405	3	3	10	1/2	3.10	3.50
406	3 1/2	4	18	1/2	4.00	4.50

### Detroit Glass Body Oil Cups

Has set feed and sight feed. Locking wing presses against knurled adjusting nut. Filling cover provided with spring that instantly snaps back when released. Keeps oil filling hole closed all the time.



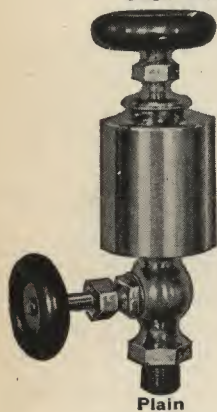
No.	I. P. Thread In.	O. D. Glass In.	Ht. Glass In.	Cap. Oz.	Pol. Brass	N. P.
500	1/8	1 1/4	1 1/8	5/8	\$1.25	\$1.40
501	1/4	1 1/2	1 3/8	1 1/8	1.50	1.70
501 1/2	1/4	1 3/4	1 5/8	1 1/2	1.75	2.00
502	3/8	2	1 7/8	2 1/2	2.10	2.35
503	3/8	2 1/4	2 1/8	4	2.55	2.85
504	3/8	2 1/2	2 3/8	5	3.15	3.50
505	1/2	3	3	10	3.90	4.30
506	1/2	3 1/2	4	18	4.80	5.30

### No. 680 Engine Lubricators

Lubricators with air cock and tube are so constructed that flow of oil is regulated by condensation (it feeds as it condenses), which is an important feature.

#### Plain

Diam. Body In.	I. P. Thread In.	Price Each	Diam. Body In.	I. P. Thread In.	Price Each
1	1/4	\$2.00	2 1/4	1/2	\$3.25
1 1/4	3/8	2.20	2 1/2	1/2	3.75
1 1/2	3/8	2.40	3	3/4	4.75
1 3/4	1/2	2.60	3 1/2	3/4	7.00
2	1/2	2.90	4	3/4	10.00
<b>With Air Cock and Tube</b>					
1 1/4	3/8	\$3.20	2 1/2	1/2	\$4.75
1 1/2	3/8	3.40	3	3/4	5.75
1 3/4	1/2	3.60	3 1/2	3/4	8.00
2	1/2	3.90	4	3/4	11.00
2 1/4	1/2	4.25*	..	..	....



Plain

### Detroit Glass Body Oil Cups

Has sight feed, set feed and stop feed features. Stop feed consists of a lever at top of cup which permits oil to be shut off, fed at regular rate or in a stream without disturbing set feed adjustment.



No.	I. P. Thread In.	O. D. Glass In.	Ht. Glass In.	Cap. Oz.	Pol. Brass	N. P.
600	1/8	1 1/4	1 1/8	5/8	\$3.00	\$3.50
601	1/4	1 1/2	1 3/8	1 1/8	3.25	3.75
601 1/2	1/4	1 3/4	1 5/8	1 1/2	3.50	4.00
602	3/8	2	1 7/8	2 1/2	3.75	4.25
603	3/8	2 1/4	2 1/8	4	4.25	4.75
604	3/8	2 1/2	2 3/8	5	5.25	5.75
605	1/2	3	3	10	7.25	8.00
606	1/2	3 1/2	4	18	9.25	10.25

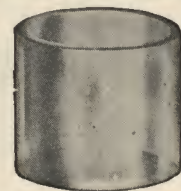
### Detroit Gas Engine Lubricators

Has screw filler cap. For use on gas, gasoline and oil engines. Has sight feed, set feed and snap feed features. Body made of pressed brass; sight feed posts of rod brass. Equalizing tube to overcome back pressure from engine and ball check in base are provided.



No.	O. D. Glass In.	Ht. Glass In.	Cap. Oz.	I. P. Thread In.	Pol. Brass	N. P.
201	1 1/2	1 3/8	1 1/8	1/4	\$1.80	\$2.15
201 1/2	1 3/4	1 5/8	1 1/2	1/4	2.00	2.40
202	2	1 7/8	2 1/2	3/8	2.80	3.25
203	2 1/4	2 1/8	4	3/8	3.50	4.10
204	2 1/2	2 3/8	5	3/8	4.00	4.60
205	3	3	10	1/2	5.40	6.25
206	3 1/2	4	18	1/2	7.00	8.20

### Oil Glasses and Washers



No.	O. D. In.	Hgt. In.	Price Each	No.	O. D. In.	Hgt. In.	Price Each
000	1	7/8	\$ .05	3	2 1/4	2 1/8	\$ .15
00	1 1/8	1	.06	4	2 1/2	2 3/8	.25
0	1 1/4	1 1/8	.08	5	3	3	.35
1	1 1/2	1 3/8	.10	6	3 1/2	4	.65
1 1/2	1 3/4	1 5/8	.10	8	4 1/4	5	1.50
2	2	1 7/8	.12	..	..	..	....



**Detroit Plain Brass Oil Cups**

Made with or without tube. A small wick placed in tube with one end in oil provides a regular, efficient and economical means of feeding oil to bearings.

Unless otherwise specified, oiler will be furnished without tube.

Size No.	I. P. Thread Inches	Diam. Inches	PRICE, EACH			
			Brass	Brass with Tube	N. P.	N. P. with Tube
00	1/8	5/8	\$.25	\$.35	\$.45	\$.55
0	1/8	3/4	.30	.40	.50	.60
1	1/8	7/8	.35	.45	.55	.65
2	1/4	1	.40	.50	.65	.75
3	1/4	1 1/8	.50	.60	.75	.85
4	1/4	1 1/4	.60	.70	.90	1.00
5	3/8	1 1/2	.90	1.00	1.25	1.35
6	3/8	1 3/4	1.25	1.35	1.65	1.75
8	1/2	2	1.75	1.85	2.25	2.35

**No. 550 Detroit Spring Compression Grease Cups**

The amount of grease fed is determined by adjusting position of the thumb nut so plunger can descend only the required distance. Made of cast brass. Small spring in thumb nut.



Size	In-side Diam. In.	Out-side Diam. In.	Plunger Ht. In.	I. P. Thread In.	Capacity Oz.	PRICE, EACH	
						Polished Brass	Nickel-plated
00	1	1 3/8	4	1/8	1/3	\$1.50	\$1.75
0	1 1/4	1 5/8	4 3/4	1/4	1	2.00	2.25
1	1 1/2	1 7/8	5 3/8	1/4	1 1/2	2.50	2.80
1 1/2	1 3/4	2 1/8	6 1/8	1/4	2 1/4	2.85	3.20
2	2	2 1/2	6 5/8	3/8	3 1/4	3.20	3.60
2 1/2	2 1/4	2 3/4	7	1/2	4 3/4	3.75	4.40
3	2 1/2	3 1/8	7 1/2	1/2	6	4.30	5.00
4	3	3 5/8	8 3/8	1/2	10	6.00	6.75

**Detroit Steel and Brass Grease Cups****No. 560 Without Leather Washer****No. 590 With Leather Washer**

Finished in plain brass or steel.

No. 560 is furnished in all sizes. No. 590, in Nos. 000 to 2, inclusive.

Order by number, size and finish.



Size No.	I. P. Thread Inches	I. D. Inches	Cap. Ounces	Price Each
000	1/8	3/4	1/4	\$.60
00	1/8	1	1/2	.70
0	1/4	1 1/4	2/3	.90
1	1/4	1 1/2	1	1.15
2	3/8	2	2	1.50
3	1/2	2 1/2	3 1/2	2.15
4	1/2	3	5	2.90

**No. 530 Detroit Grease Cups**

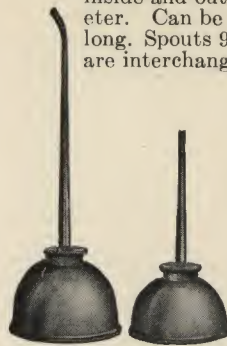
The grease cup is made of cast brass and is strong, durable, well designed, and carefully made. Each cup is carefully inspected before shipment.

The inside is in the form of an inverted cone without flat surface, so the grease cannot clog.

Size	Outside Diameter Inches	I. P. Thread Inches	Capacity Ounces	PRICE, EACH	
				Polished Brass	Nickel-plated
00	1 1/8	1/8	1/2	\$.70	\$.80
0	1 1/4	1/4	2/3	.90	1.05
1	1 1/2	1/4	1	1.15	1.35
2	2	3/8	2	1.50	1.80
3	2 3/4	1/2	3 1/2	2.15	2.60
4	3 1/4	1/2	5	2.90	3.40

**Copperized Steel Bench Oilers**

Made from 20-gauge cold-rolled steel with clock spring steel bottoms. Heavy electro copper-plated inside and out. Filler opening, 1 1/2 inches in diameter. Can be fitted with spouts 2 1/2 to 18 inches long. Spouts 9 inches and longer are curved. Spouts are interchangeable and will fit other styles of oilers.



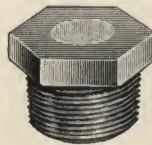
No.	Cap. Pints	Diam. Inches	Spout Inches	Price per Dozen
12	1/4	2 3/4	2 1/2	\$4.50
13	1/3	3 3/8	3	5.50
13A	1/3	3 3/8	5	6.00
14	1/3	3 3/8	9	6.50
14A	1/2	3 3/4	3	7.50
14AA	1/2	3 3/4	5	8.00
14B	1/2	3 3/4	9	8.50
15	1	4 1/4	3	9.25
15A	1	4 1/4	5	9.75
16	1	4 1/4	9	10.50

**Engineers' Fillers****Copper-plated Steel**

These engineers' fillers are made of extra heavy stock and are handsomely finished.

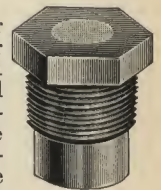
They are made in either copper-plated steel or brass. The steel fillers are heavily copper-plated both inside and out.

No.	Capacity Pints	Diam. Inches	Price per Doz.
19	1	4 1/8	\$14.00
19A	1 1/2	4 3/4	17.00
210	2	5	20.00
211	4	6	24.00

**Fusible Plugs**

No. 750 is made regular length and constructed for outside insertion. No. 751 is made regular length and constructed for inside insertion. No. 752 is made extra long (having an extension one inch beyond the thread) and constructed for outside insertion only. No. 753 is made extra long and constructed for inside insertion only.

In ordering, always give style, number and size.



Size Inches	PRICE, EACH		Size Inches	PRICE, EACH	
	Nos. 750, 751	Nos. 752, 753		Nos. 750, 751	Nos. 752, 753
3/8	\$.55	\$1.10	1	\$1.00	\$2.00
1/2	.60	1.20	1 1/4	1.50	3.00
3/4	.75	1.50	1 1/2	2.00	4.00

**ThredKut Pipe Threading Oil**

For power machines or hand dies. Flows freely at unusually low temperatures. Never burns out. Free from objectionable odor.

Supplied in 1, 5 and 10-gallon cans. Also in 15, 30 and 55-gallon steel drums, with faucet.

Prices upon application.

**Plumbers' Lard Oil**

Materially assists in cutting perfect threads. Transparent and free from objectionable odor. Will not solidify on cold days.

Supplied in 1, 5 and 10-gallon cans. Also in 15, 30 and 55-gallon steel drums.

Prices upon application.





**Sand-Banum Boiler Scale Eliminant**

Sand-Banum is a pure vegetable compound, made of tropical resins which are constant under the application of heat.

It is guaranteed to be harmless to boilers, packings, etc. It is free from ammonia, graphite, water-glass, and all caustic chemicals. It is a carefully prepared concentrate, protected by U. S. and foreign patents granted, and further patents pending.

Oil in the boiler feed water is maintained in such fine state of division that it is

impossible to cause overheating.

Does not carry over with the steam and can be used without harmful effects in steam plants in the manufacture of food products.

Covers the interior of boilers, tubes, and parts with a thin coating, which protects these parts against pitting and corrosion. This eliminates the necessity of internal painting and reduces electrolysis to a minimum.

Scale cannot be formed because Sand-Banum envelopes every particle of scale-forming ingredients. As the water is evaporated it absorbs the incrusting solids, regardless of its chemical composition, which prevents crystallization and permits removal by the regular blow-off.

Prevents priming and foaming as it reduces the surface tension of the boiler water.

Put up in cans in the form of a highly concentrated liquid, ready for use. Weight, approximately 1 pound. The contents of one can is sufficient to prevent the formation of scale, for one month, in boilers having a rating of 250 h.p. This is the average dose and is to be applied from once to four times a month, in  $\frac{1}{4}$ ,  $\frac{1}{8}$ ,  $\frac{1}{2}$ , or full can doses, depending on individual plant conditions.

**Dixon's Ticonderoga Flake Graphite**

Prepared in the large (or No. 1) flake, and the powdered flake (or No. 2) size.

This graphite is indispensable to engineers and mechanics for coating gaskets and packing, for pipe fitting, etc.

No.	Size Pkg. Pounds		No. of Cans in Case	Price per Case	Price Each	Price per Pound
632	1	Paper Cans.....	36	\$13.80	\$4.45	...
633	5	Screw-Top Tin Cans.....	10	18.50	2.00	...
634	10	Screw-Top Tin Cans.....	5	18.00	3.75	...
644	25	Boxes.....	...	...	8.75	...
645	50	Boxes.....	...	...	16.50	...
646	100	Kegs.....	...	...	...	\$ .32
646 $\frac{1}{2}$	200	Kegs.....	...	...	...	.31
647	400	Barrels.....	...	...	...	.30

**Arco Pipe Joint Compound**

Arco Jointite is recommended to plumbers, steamfitters, etc.

It never dries out and is made by combining extremely finely ground pigments with durable water repelling oriental oils that remain elastic and do not taint the water. It lubricates the joint, fills the spiral channel and makes the pipe joint water-tight. Pipes can be disjoined after years of service by an easy pull on the wrench and other pipes will not be disturbed.

Arco Jointite should be applied to the pipe threads as well as to the fitting thread; this insures an even distribution of the compound and a tight joint.

It resists action of acids and alkalis and is not affected by electrolysis and prevents corrosion of threads.

Prices upon application.

**X Boiler Liquid**

X Liquid is an absolute liquid. It has a chemical affinity for water. When it is poured into a leaking boiler, it instantly combines itself with the water in the boiler. In trickling out through the leak or crack, it is changed by the free atmospheric oxygen from a liquid to a solid, thus stopping the leak or crack. The surplus X in the boiler will automatically repair any new leaks which may develop.

X stops the leak quickly and permanently. It loosens and prevents rust and scale.

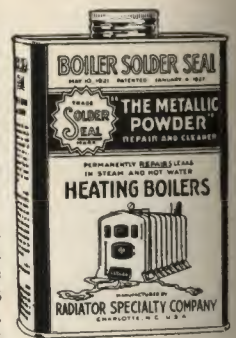
1-Quart Cans.....	each \$6.00
$\frac{1}{2}$ -Gallon Cans.....	each 10.00

**Boiler Solder Seal**

Boiler Solder Seal is a scientifically prepared powder which automatically finds and permanently repairs leaks in steam and hot water heating systems. It not only repairs cracks in the boiler sections, but works equally as well on leaking pipes, split nipples, sand holes, poor threads, and defective castings.

After Boiler Seal has hardened in the leaks it has a tensile strength which is as high as that of the metal to which it is attached. It will withstand any steam pressure. Furnished prepared for instant use.

Price, in 1-Pound Cans Only.....each \$7.00

**Vinco Heating System and Hot Water Supply System Cleanser**

Vinco is a harmless insoluble powder that removes all oil, grease, rust, scale, and dirt from heating and hot water supply systems.

It thus stops priming, foaming, surging, and slow steaming in new boilers and eliminates fuel waste and low efficiency in old ones.

Complete directions and quantities required are on every can.

Booklets with full information sent upon request.

3, 5, and 10-Pound Cans.....	per pound \$1.50
Special Kit-Kans of $\frac{1}{2}$ Pounds.....	per can 2.55

**Nos. 1 and 2 Smooth-On Iron Cements**

Used by mixing with water. For repairing breaks in castings, making tight joints and seams, and stopping leaks in boilers, pipe lines, pressure containers, etc. Becomes hard as iron when metalized, and expands at the same rate. May be used on iron, brass, steel, copper, lead, aluminum, etc., either alone or as a filling compound under a plate, and will withstand fire, water, steam, oil, and high pressures.

No. 1 is a quick-hardening iron cement. No. 2 is a slow-hardening hydraulic iron cement. Sold in powdered form.

7-Ounce Can (No. 1 Only).....	per can \$ .30
1-Pound Can.....	per pound .50
5-Pound Can.....	per pound .40
25-Pound Keg.....	per pound .32
100-Pound Keg.....	per pound .27 $\frac{1}{2}$



## Fine Wire Tube Brushes



Made of fine tempered steel wire. A good brush to be used in connection with a scraper, or in low pressure boilers. Sizes  $\frac{3}{4}$  to 6 inches.

Sizes less than 3 inches take 3 inch list.

Price.....per inch \$.50

## Boiler and Heater Brushes

## Rectangular

No.	Brush In.	Nipple In.	Price Each
1900	1 $\frac{5}{8}$ x4 x4 $\frac{1}{2}$	$\frac{1}{4}$ x2 $\frac{1}{2}$	\$1.00
1901	2 $\frac{1}{2}$ x6 x4 $\frac{1}{2}$	$\frac{1}{4}$ x2 $\frac{1}{2}$	1.50
1902	3 $\frac{1}{4}$ x6 $\frac{5}{8}$ x4 $\frac{1}{2}$	$\frac{1}{4}$ x2 $\frac{1}{2}$	2.00

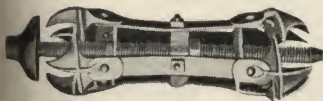


## Spiral Flat Wire Flue Brushes



Price, 2 $\frac{3}{4}$ -Inch and Smaller.....each \$1.37  
Price, 3-Inch and Larger...per inch .50

## Pilley's No. 570 Engineer's Favorite Flue Scrapers



Sizes are for outside diameter of tubes, from  $1\frac{1}{4}$  up to 6 inches.

Shipping weight, per inch, about 1 pound.  
Price ....in. diam. \$1.00

## Ruggles Perfection Flue Cleaners



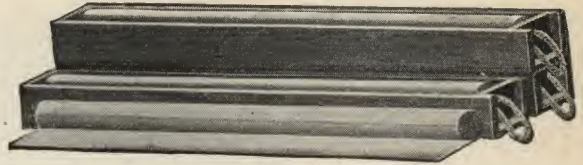
This cleaner is light, strong and simple, and the knives are so made that they are always sharp. Heads are steel drop forgings.

Will clean welded flues

as nicely as old ones, and remove the scales from tube without cutting the metal. Cleans hot or cold flues without changing the temper. It has no screws nor rivets in its construction. Can be operated by a flexible handle, thus permitting its use in small fire rooms or where space is limited.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1 $\frac{1}{4}$ -2	\$2.00	2 $\frac{3}{4}$	\$2.75	3 $\frac{1}{2}$	\$3.50	5	\$6.00
2 $\frac{1}{4}$	2.25	3	3.00	4	4.00	..	..
2 $\frac{1}{2}$	2.50	3 $\frac{1}{4}$	3.25	4 $\frac{1}{2}$	5.00	..	..

## Sheet Lead



Weight per Square Foot Pounds	APPROXIMATE THICKNESS				AVERAGE SIZE OF SHEET			Average Weight per Roll Pounds
	Decimals Inches	Nearest Fraction Inches	Birmingham Gauge No.	Ft.	Width In.	Length Feet		
1½	.0255	3⁄128	23	7	4	18	225	
2	.0340	1⁄32	20	7	6	18	270	
2½	.0425	5⁄128	19	8	3	19	390	
3	.0510	3⁄64	18	8	3	19	475	
3½	.0595	7⁄128	17	8	3	19	560	
4	.0680	1⁄16	16	8	6	20	680	
5	.0850	5⁄64	14	8	6	20	850	
6	.1010	7⁄64	12	8	9	22	1050	
7	.1180	15⁄128	11	8	9	22	1300	
8	.1350	1⁄8	10	8	9	25	1600	

Prices upon application.

## Metals

## Pig Lead



Pigs weigh about 100 pounds.

## Bar Lead



In 25-pound boxes.

## Pig Tin



Banca and Straights; pigs weigh about 100 pounds.

## Bar Tin



In 500-pound cases.

Prices of metals upon application.

## Crown Aluminum Solder



A welding compound in 2 grades, a soft for sheet and hard for castings. It is applied without flux and at a low temperature, avoiding injury to metal. After application it outwears aluminum. Packed in air-tight tubes.

Price .....per pound \$4.00

## Lead Wool



Lead wool is lead cut in fine fibres which are put into the joint in the same way as yarn. The lead is being calked from the yarn up, which gives tight, perfect joint that will never leak and yet is flexible.

Price.....per pound ....



Red Sheet Packing

Will pack an air, steam, hot or cold water joint equally well. It is a non-conductor. Particularly adapted to packing expansion or steam joints, as it does not burn or char.

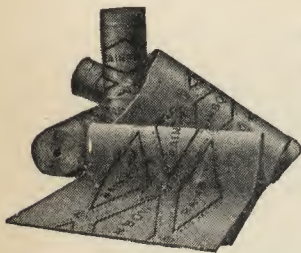
Joints should be faced with plumbago, lamp black or chalk.



Thick- ness In.	Wt., Lbs. per Sq. Yd.	Thick- ness In.	Wt., Lbs. per Sq. Yd.
1/32	3 1/8	1/8	12 5/8
1/16	6 1/2	3/16	17 1/8
3/32	9 3/8	1/4	21 5/8

Per pound.....

U. S. Rainbow Sheet Packing



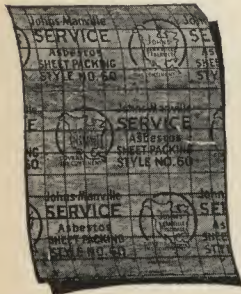
Will pack an air, steam, hot or cold water joint equally well and will not blow out under high pressure or temperature. It is a non-conductor. Particularly adapted to packing expansion or steam joints, as it does not burn or char.

It will make a tight joint however rough the surfaces to which it is applied may be. Furnished in standard rolls

36 inches wide, 1/32 to 1/4 inch in thickness, and weighing approximately 100 and 200 pounds.

Price.....per pound .....

No. 60 Johns-Manville Service Sheet Packing



For packing parallel surfaces of flanges against steam air, water, ammonia, oil and various acidulated and alkaline or other chemical solutions.

Furnished in standard sheets 54x63 inches and 54x126 inches and thicknesses of 1/64, 1/32 and 1/16 inch; also made 1/8 and 3/32 inch thick; 1/2 and 1/4 inch thicknesses also furnished in sheets 108x126 inches.

Thick. In.	Per Sq. Yd.	Approx. Wt., Lbs. Per Sq. Yd.	Thick. In.	Per Sq. Yd.	Approx. Wt., Lbs. per Sq. Yd.
1/16	....	5.33	1/64	....	1.34
1/32	....	2.67	1/8	....	10.67

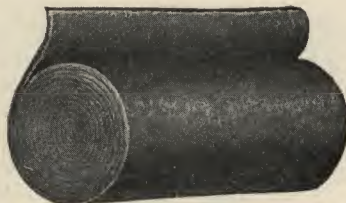
Hair Felt

Made of cattle hair, carefully selected and chemically cleaned.

Used for refrigerator insulation and for insulating hot and cold water pipes.

Bales 6 feet wide contain 300 square feet; bales 3 feet wide, 150 square feet.

Extra charge for cutting less than 300 square feet.



Thick. In.	Per Sq. Ft.	Wt., Oz. per Sq. Ft.	Thick. In.	Per Sq. Ft.	Wt., Oz. per Sq. Ft.
1/4	\$.08	4	1	\$.16	12
1/2	.10	6	1 1/2	.23	18
3/4	.13	9	2	.30	24

Palmetto Twist Packing



Any size valve can be packed from one spool, by unstranding, as each single strand is a perfect packing in itself.

Size In.	Price per Lb.	No. Feet	Size In.	Price per Lb.	No. Feet	Size In.	Price per Lb.	No. Feet
1/8	\$2.00	70	5/16	\$2.00	23	1/2	\$2.00	8
3/16	2.00	54	3/8	2.00	14	..	....	..
1/4	2.00	33	7/16	2.00	10	..	....	..

Spiral Piston Packing



This brand has an oil proof strip between the layers of rubber and the cloth, thus preserving the rubber from the action of the oil used in its lubrication. Made in sizes 1/8 to 3 inches.

Per Pound.....\$1.20

Round Piston Packing



For packing piston heads in hot or cold water pumps.

Made of specially selected duck.

Put up in coils.

Sizes, 1/4 to 3 inches.

Price.....per pound \$1.00

Rubber Back Packing

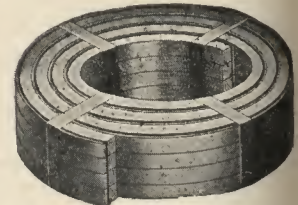
Made of closely woven duck with high grade white friction compound.

For use in hot or cold water pumps.

Put up in coils.

Sizes, 1/4 to 3 inches.

Price.....per pound \$1.50



Square Flax Packing

Made of pure, long fibre flax, possessing great strength. Contains pure lubricants and is without hemp, jute, tow or any gritty substances.

Sizes, 1/4 to 3 inches.

Per Pound.....



Asbestos Wick

Style X is a plain asbestos wick, XX is pure asbestos for wire wiping and stem packing. Standard is long fibred, hard twisted for same uses.

Style	Feet per Pound	Per Pound
X	60	\$.50
XX	80	.75
Standard	80	1.00

Candle Wick

In Balls

Carefully manufactured of cotton specially selected for the purpose.

For packing small valve stems, etc.

Furnished in 1/8 and 1/4-pound balls.

Price.....per pound .....

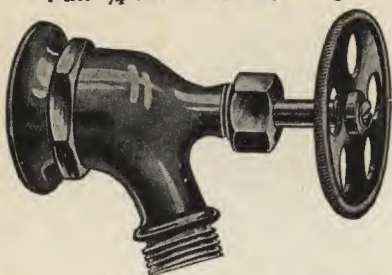




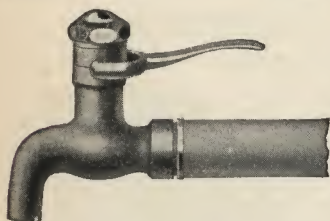




### No. 510 Boston Pattern Lawn Faucets Full 3/4-inch Seat Opening



Polished and nickel-plated; milled wheel handle.  
Either 1/2 or 3/4-inch iron pipe thread; 3/4-inch will be sent unless otherwise specified.  
Has encased seat washers.  
Price, No. 510.....each \$3.15



### No. 215 Radiator Fillers

Auto radiator filler, rough brass, nickel-plated.

No. 215.....each \$4.50

### Peoria Overhead Vehicle Washers



The Peoria Overhead Washer eliminates unnecessary footsteps, loss of time and wasted energy in lifting, pulling and jerking the hose to position. It is always within easy reach and at the proper working angle.

It is installed overhead and can be easily pulled into position, the swivel functions perfectly, describing a 10-foot circle, giving ample clearance for the largest car. The hose is kept off the floor, out of the way of traffic and wear and tear.

All that is necessary is to securely anchor the washer to the ceiling and connect with the water supply. Any handy man can do the job.

In all sections that bear the strain of usage the materials are cast in malleable iron or are of cold drawn steel.

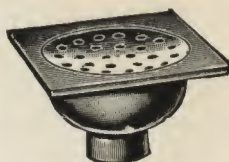
The bearings are of the best machine turned red brass, and the packing on the swivel is of the finest lubricated flax, long lived and easily replaced.

The inlet or supply connection is for 1-inch pipe and the swinging arm is 3/4-inch galvanized pipe.

Overhead Vehicle Washers.....each \$15.00

Our desire is to have you come to us for your every day requirements.

### Cast Iron Cesspools with Bell Trap



#### No. 200 With Loose Strainer

Size.....inches

Outlet....."

Price, Loose, Std.....each

" " Ex. Hy....."

" Hinged, Std....."

" Hinged, Ex. Hy....."

If with Threaded Outlet add "

6x6

2

1.80

1.15

.80

1.20

.40

9x9

3

\$1.60

1.90

1.15

1.55

.60

12x12

3

\$2.40

3.40

1.80

3.60

.80

12x12

4

\$2.40

3.40

2.60

3.60

.80

13x13

4

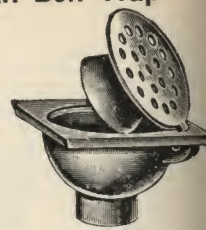
\$2.90

4.00

2.80

4.40

.80



#### No. 202 With Hinged Strainer

Size.....inches

Outlet....."

Price, Loose, Std.....each

" " Ex. Hy....."

" Hinged, Std....."

" Hinged, Ex. Hy....."

If with Threaded Outlet add "

6x6

2

\$1.60

1.90

1.15

1.55

.60

9x9

3

\$2.40

3.40

1.80

3.60

.80

12x12

4

\$2.90

4.00

2.80

4.40

.80

### Cast Brass Bell Trap Cesspools



No. 208, Plain



No. 210, Threaded

#### No. 208, PLAIN OUTLET

Size Inches	Outlet Inches	ALL BRASS		IRON BODY BRASS STRAINER AND TOP		No. 210 Threaded Outlet Add
		Pol. Top	N.P. Top	Pol. Top	N.P. Top	
6x 6	2	\$3.70	\$4.20	\$2.00	\$2.50	\$4.40
9x 9	3	6.50	7.50	3.50	4.50	.60
12x12	4	10.00	11.00	6.50	7.50	.80

### Series 510 Josam Double Drainage Floor Drains or Cesspools



All cast iron. Duriron at added cost. Construction of grate eliminates possibility of tilting.

Used in basement areas, scale and elevator pits, etc., swimming pools and promenade

roofs or decks. Galvanized or with brass top rim and grate at added cost. With female threaded outlet or slip caulked joint connections.

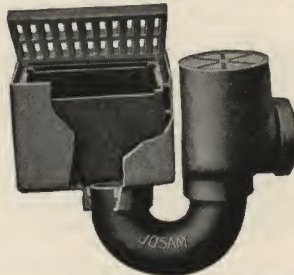
#### With 8-Inch Grate

No.	Outlet Inches	PRICE, EACH	
		With Iron Grate	With Brass Rim, Grate
512	2	\$6.00	\$11.70
513	3	6.00	11.70
514	4	6.00	11.70

#### With 11-Inch Grate

No.	Outlet Inches	PRICE, EACH	
		With Iron Grate	With Brass Rim, Grate
524	4	\$9.00	\$19.70
525	5	9.00	19.70
526	6	9.00	19.70

### Series 710A Josam Combined Drain and Deep Seal Trap



For use where there is sediment in the drain water. Heavy cast iron rectangular body with 9x12-inch hinged grate, removable sediment bucket, deep seal trap and brass floor cleanout; female threaded outlet.

Caulked spigot outlet same price. Can be furnished with back water valve extra.

Extra inlet on any side

above the water line at \$1.00 extra. Chromium-plated extra.

Outlet Overall In.	Depth, In.	Type	EACH		WITH BRASS TOP	
			Japnd.	Galv.	Japnd.	Galv.
2	14 1/2	712A	\$20.00	\$28.50	712AB	\$32.25
3	17	713A	22.00	31.30	713AB	34.25
4	18	714A	25.00	35.30	714AB	37.25

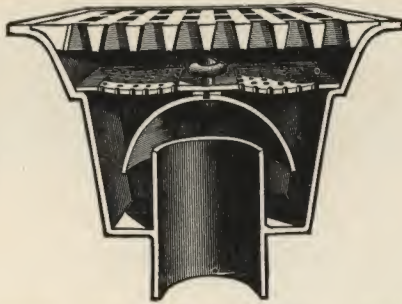
\$39.75  
42.55  
46.55



**No. 230 Cast Iron Stable Cesspools**

**Extra Heavy  
With Bell Trap  
and Grating**

The 16x16-inch size can also be furnished with 6-inch outlet.



Size.....inches	8x8	10x6	12x12	16x16
Depth.....inches	5	4	10	10
Outlet.....inches	2	2	4	4
Price, Plain.....each	\$3.00	3.00	3.75	4.50

**Series 900G Josam Garage and Industrial Floor Drains**

**With Cleanout**

For garage and industrial plant floors. Furnished with iron sand bucket and gas seal cone. Diameter of brass cleanout plug 2 inches larger than drain outlet. Grate, 14 inches. Outlet, 4 inches.



No.	Slab In.	Price Each	No.	Slab In.	Price Each
910G	4	\$58.00	940G	10	\$76.00
920G	6	66.00	950G	12	81.00
930G	8	71.00			

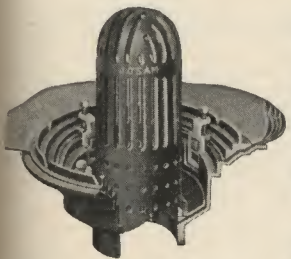
If without Sand Bucket, Deduct.....each \$10.00  
If without Gas Seal Cone, Deduct.....each 6.00  
For Brass Back Water Valve, Add.....each 5.00  
For Polished Brass Rim and Grate, Add.....each 23.70

**Series 450G Josam Improved Roof Drains**  
**For Narrow Valleys or Gutters**

Designed for use in gutters, valleys, or other narrow spaces in roof construction. Equipped with Josam adjustable clamping ring which eliminates the use of flashing. Has combined removable dome strainer and sediment cup. Furnish 2, 3 or 4-inch tapped side outlet \$1.00 additional list.

This roof drain will meet all requirements where gutter width is not less than 8 inches.

No.	Outlet Inches	Weight Pounds	Price Each	No.	Outlet Inches	Weight Pounds	Price Each
452G	2	13	\$9.00	454G	4	13	\$9.00
453G	3	13	9.00	455G	5	14	10.00

**Series 410S Josam Roof Drains**  
**No Flashing Required**

Designed to apply to either concrete or wood roof deck.

Roofing felts are joined to drain with an improved type clamping ring which has four adjustable bronze clamping posts with brass set screws. A perfectly water-tight connection is made between roofing felts and body of drain.

Threaded outlet. Has removable combined sediment cup and strainer. Can be furnished

with square flange. Side outlet at added cost.

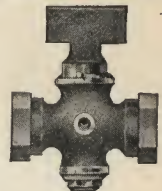
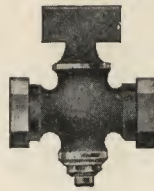
No.....	412S	413S	414S	415S	416S	418S
Outlet.....inches	2	3	4	5	6	8
Price.....each	\$14.00	14.00	14.00	16.00	18.00	26.00

**Stops and Stop and Drains**

**Tee Handle—Flat Way—For Iron Pipe**

**No. 8100 Stop**

**No. 8110 Stop and Drain**



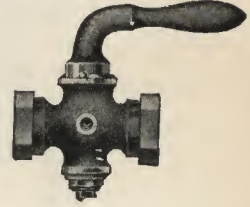
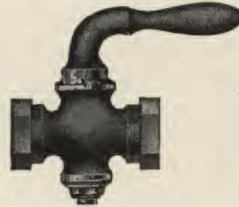
Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/4	\$1.05	1	\$2.75	1/4	\$1.10	1	\$2.85
3/8	1.10	1 1/4	4.50	3/8	1.15	1 1/4	4.65
1/2	1.15	1 1/2	7.70	1/2	1.20	1 1/2	7.85
5/8	1.50	2	13.40	5/8	1.55	2	13.55
3/4	1.80	...	...	3/4	1.85	...	...

**Stops and Stop and Drains**

**Lever Handle—Flat Way—For Iron Pipe**

**No. 8120 Stop**

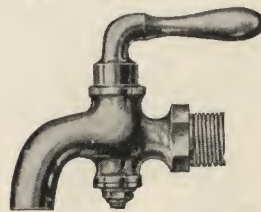
**No. 8130 Stop and Drain**



Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/4	\$1.05	1	\$2.75	1/4	\$1.10	1	\$2.85
3/8	1.10	1 1/4	4.50	3/8	1.15	1 1/4	4.65
1/2	1.15	1 1/2	7.70	1/2	1.20	1 1/2	7.85
5/8	1.50	2	13.40	5/8	1.55	2	13.55
3/4	1.80	...	...	3/4	1.85	...	...

**No. 8360 Ground Key Plain Faucets**

**For Iron Pipe  
Plain Lever Handle**



Size Inches	Price, Each	Price, Each	Price, Each	Size Inches	Price, Each	Price, Each	Price, Each
	Rough	Fin.	N. P.		Rough	Fin.	N. P.
1/4	\$1.20	\$1.50	\$1.80	1	\$3.30	\$4.05	\$4.80
3/8	1.25	1.55	1.85	1 1/4	5.60	6.70	7.85
1/2	1.30	1.60	1.90	1 1/2	9.30	11.20	13.10
5/8	1.85	2.20	2.60	2	16.10	18.75	21.35
3/4	2.25	2.80	3.40	...	...	...	...

**No. 3004 Lock Lever Hose Faucets for Iron Pipe**

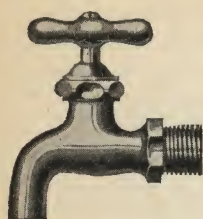
**With Shoulder**



Size .....	inches	1/2	5/8	3/4	1
Price, Rough .....	each	\$2.40	\$3.15	\$3.80	\$5.70
" Finished .....	"	2.80	3.65	4.55	6.70
Size .....	inches	1 1/4	1 1/2	2	...
Price, Rough .....	each	\$9.20	\$14.70	\$24.85	...
" Finished .....	"	10.70	17.20	28.35	...



### Compression Plain Faucets For Iron Pipe

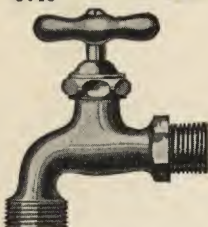


Size Inches	Finished Each	Nickel Plated Each
3/8	\$1.20	\$1.30
1/2	1.40	1.50
3/4	1.60	1.80
1	3.30	3.60
1 1/4	6.40	6.80

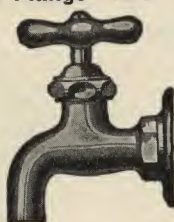
### Compression Hose Faucets

#### For Iron Pipe

Size Inches	No. 7001 Finished Each	N. P. Each
1/2	\$1.60	\$1.70
3/4	1.80	2.00
1	3.75	4.05
1 1/4	7.05	7.45

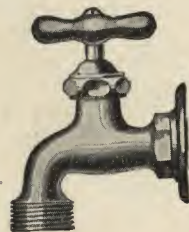


### No. 7020 Compression Plain Faucets Solid Flange—With Hexagon



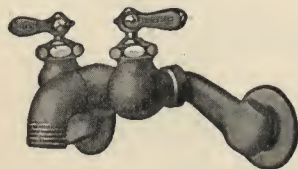
Size.....	inches	1/2	3/4
Price, No. 7020, Female Flange, Finished.....	each	\$1.90	\$2.30
Price, No. 7020, Female Flange, N.P.....	each	1.90	2.30
Price, No. 7019, Male Flange, Finished.....	each	2.05	2.50
Price, No. 7019, Male Flange, N.P.....	each	2.05	2.50
Add for Hose End.....	each	.20	.20
Add for Stuffing Box.....	each	.25	.30

### No. 7021 Compression Hose Faucets Solid Female Flange—For Iron Pipe



Size Inches	PRICE, EACH		ADD FOR		
	Finished	Nickel-Plated	Stuffing Box	Four-Ball-China Indexed Handle	Full China Cross Handle
1/2	\$2.10	\$2.10	\$.25	\$.50	\$.65
3/4	2.50	2.50	.35	.60	.75

### No. 305 Quatern Slop Sink Faucets



Quatern double slop sink faucet with adjustable arms, 3/4-inch hose thread on spout. Connections for 1/2-inch iron pipe, female, on 8-inch centers.

No. 305, Rough Nickel-Plated.....	each	\$10.00
No. 305, Rough Chromium-Plated.....	each	11.00
No. 305, Polished Nickel-Plated.....	each	14.00
No. 305, Polished Chromium-Plated.....	each	17.50

### No. 65 Quatern Factory Sink Faucets



Quatern mixing faucet for factory wash sinks, rough nickel-plated, with nickel-plated index brass handles, and concealed flow reducers.

Connections for 3/4-inch iron pipe, male.

Price.....	each	\$6.00
Add for Hose End.....	"	.25

### No. 223 Quatern Factory Sink Faucets



Quatern mixing faucet for factory wash sink, rough nickel-plated with nickel-plated indexed handles and concealed flow reducers, 3/4-inch iron pipe male connection.

Price, No. 223.....	each	\$6.50
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### No. 224 Quatern Factory Sink Faucets

#### With Rose Spray

Quatern mixing faucet with rose spray for factory wash sink, rough nickel-plated with nickel-plated indexed handles and concealed flow reducers, 3/4-inch iron pipe male connection.

Price, No. 224.....	each	\$8.50
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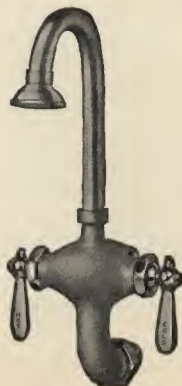
### No. 225 Quatern Factory Sink Faucets

#### With Gooseneck and Rose Spray

Quatern mixing faucet with gooseneck and 1 1/2-inch rose spray for factory wash sink, rough nickel-plated with indexed handles and concealed flow reducers, 3/4-inch iron pipe male connection.

The concealed flow reducer used in Quatern Factory Mixing Faucets serves the double purpose of softening the stream, counteracting splash, and of saving water, preventing waste.

Price, No. 225.....	each	\$10.00
---------------------	------	---------







703

**Enameled Iron Apron Drinking Fountain** on painted iron brackets, with two-stream mound building projectors, Taylor automatic stream control,  $\frac{3}{4}$ -inch chromium-plated supply, self-closing valves and loose key stop, and  $1\frac{1}{2}$ -inch P trap.

No.....	702	703	704
Length Over All.....inches	26	44	55
No. of Cups.....	2	3	4
Approx. Shipping Weight....pounds	85	115	140



No. 617

**Nos. 617 and 618 Pedestal Drinking Fountain** with heavy vitreous china receptor, chromium-plated brass strainer,  $2\frac{1}{2}$ -inch O. D. steel tubing standard and cast iron closed base, chromium-plated self-closing stop, loose key volume regulator, two-stream mound building projector and automatic stream control,  $\frac{3}{8}$ -inch iron pipe waste.

Receptor,  $7\frac{1}{2}$ x10 inches  
Depth of Receptor, 3 inches  
Base,  $9\frac{1}{2}$  inches

Height.....inches	36	39
Approximate Shipping Weight.....lbs.	50	50



No. 618

### No. 570 Halsey Taylor Combination Cooler and Drinking Fountains

Bowl cast iron, enameled all over, with C. P. brass strainer; brass outlet and supply connection mounted on cooler with cover top, and base made of cast iron. Body of tank coil guard made from galvanized sheet iron. Insulation: Re-granulated cork in side walls and pressed cork board in bottom and cover of cooler. Cooling coil  $\frac{1}{2}$ -inch O. D. No. 20 gauge seamless brass tubing, tinned. Supply pipe with self-closing stop and volume regulator; 2-stream mound building projector.

Receptor	Ht. to Top, In.	Diam. In.	Wt. Lbs.	Price Each
7 $\frac{1}{2}$ x10	32	40	14	\$65.00



### No. 3 Drinking Fountain Bubblers



Nickel-plated bubbler with inlet threaded for  $\frac{3}{8}$ -inch iron pipe.

Price, No. 3.....each \$9.40

Eight small angular streams of water converge in the center of a ring to form a smooth sanitary bubble.



Showing Operation



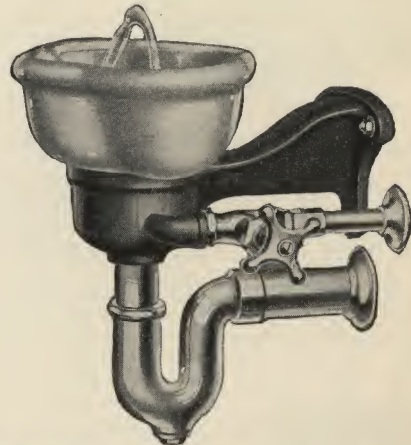
**Vitreous China Drinking Fountain** with metal guard side stream bubbler with pressure regulator, self-closing valve, loose key straight stop for  $\frac{3}{8}$ -inch iron pipe and concealed  $1\frac{1}{4}$ -inch brass trap.

Front to back 15 inches  
Width over all 16 inches

Approximate Shipping Weight.....pounds 55

The side stream feature and the metal guard over the bubbler prevent the user from coming into direct contact with the bubbler head and prevent water from falling back on the bubbler head. Fittings nickel or chromard finish.

Designed to meet specifications of Chicago Board of Health.



**No. 600 Wall Drinking Fountain** with vitreous china receptor, with chromium-plated strainer, cast iron baked grey enamel bracket to wall, chromium-plated self-closing stop, loose key volume regulator,  $1\frac{1}{4}$ -inch chromium-plated trap, nickel-plated brass supply and waste pipes, two-stream mound building projector and automatic stream control.

Receptor  $7\frac{1}{2}$ x10 inches Depth of receptor 3 inches  
Projection from wall  $11\frac{1}{2}$  inches

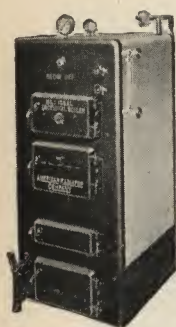
Approximate Shipping Weight, as described.....pounds 25  
Approx. Shipping Weight, without Trap Supply and Waste Fittings...pounds 18

We are in a position to furnish practically everything used in factory, mill or shop.

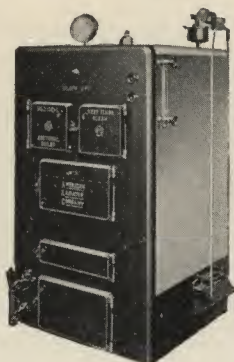


## Ideal Redflash Boilers

Completely Equipped, Metal-Covered, Porcelain Enamel Finished  
For Hard or Soft Coal, Coke, Oil or Gas



No. 1



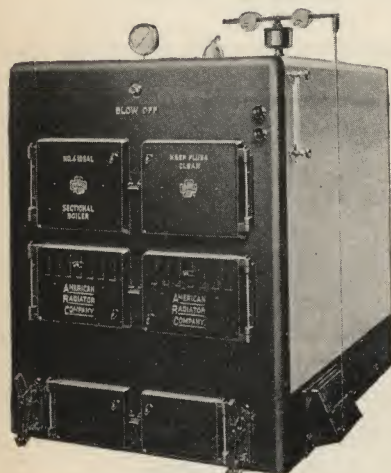
No. 2



No. 3



No. 4



No. 5

The Ideal Redflash Boiler has been developed to meet the new demands of our day. It has been entirely appropriate that the various improvements made heretofore in boilers have been fundamentally along the lines of operating economy and utter reliability. The primary purpose of a boiler is heating—but the time has come when the people expect and demand, not only a high degree of mechanical perfection in the

products that they buy—but products which are beautiful as well.

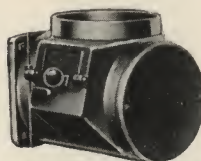
The Ideal Redflash Boiler is made in sectional design with long double flue gallery through which the gases of combustion must travel before escaping—a distance twice the boiler's length—which is not possible in the usual type of boiler. As a result of its long flue travel and carefully balanced design, the Ideal Redflash Boiler attains a high efficiency. It has an unusually quick pick-up heating capacity, insuring quick heating and abundant warmth on cold

winter mornings. Its design is carefully calculated so that the boiler functions with exceptionally high efficiency while performing at the rates at which it is called upon to operate during the major part of the heating season. Interposed between the beautiful and indestructible cabinet exterior and the boiler is 1-inch, of improved type asbestos insulation to prevent radiation heat-loss. The boiler is completely equipped with mechanical regulation and all accessories.

All contact-surfaces on doors and plate work are ground to a smooth finish for dust-proof construction.

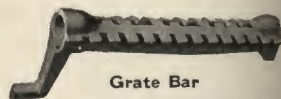
The large, scientifically proportioned fuel chamber affords abundant coal-carrying capacity for long firing periods and easy care-taking.

Note, also, the two-way smoke-hood, allowing vertical or horizontal chimney connection, thus permitting close connections and considerable saving in floor space. The smoke-hood is equipped with both choke and check dampers.



Close-Up of Two-Way  
Smoke-Hood Fully  
Equipped with Dampers

The well designed grates, with reinforced trussed construction and well-proportioned teeth and openings, permit the use of small-sized coal, such as buckwheat and pea; the openings being carefully calculated to provide a large percentage of free area so that an adequate supply of air may pass through and allow rapid, uniform and complete combustion. The top surfaces of the grates are angular in form effecting an easy grinding of clinkers when the grates are shaken—thus greatly facilitating care-taking. Every feature in this new boiler has been studiously developed in the minutest detail to insure quick heating response, high operating efficiency, and easy care-taking.

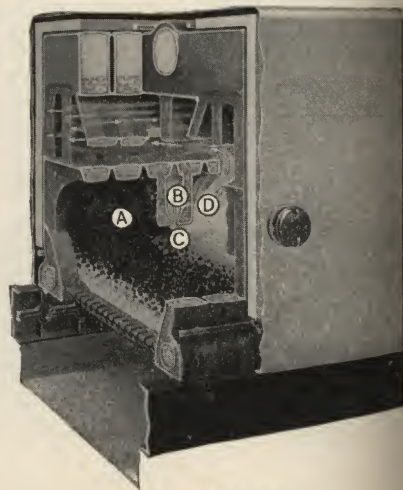


Grate Bar

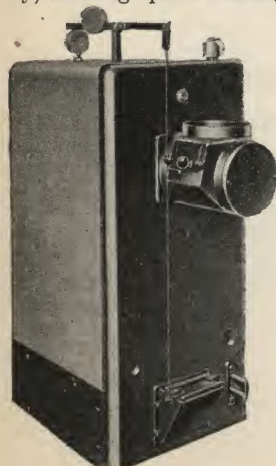
The larger sizes of the Ideal Redflash Boiler, Nos. 2, 3, 4 and 5 are also equipped with the patented Ideal smoke oxidizer device for burning any grade of soft coal smokelessly. This oxidizer is simple and effective. It is water-backed throughout and cannot burn out. The space between the base of the oxidizer and the grating has been duly proportioned to meet all requirements.

The Ideal Redflash Smokeless Boiler is easily fired and cared for, guaranteeing satisfactory service without skilled attention.

Through its cleanliness and great beauty, the Ideal Redflash Boiler allows the house owner to convert his cellar into a really useful, livable place. In accomplishing this, it opens to heating merchants a new, almost unlimited opportunity for replacement business. The metal jacket of the boiler is finished in a beautiful lustrous red backed enamel. The beauty of the boiler is permanent.



Sectional View



Rear View



## Ideal Redflash Boilers

## Ratings and Dimensions

## Steam

Boiler No.	*Recommended Load Sq. Ft. Equivalent Direct Radiation	Grate Area Square Feet	Fuel Capacity Pounds	No. AND SIZE INCHES		Length Inches	Approx. Ship. Weight Pounds
				Out-lets	In-lets		
1-S-4	200	1.33	120	1-3	2-2	16	1045
1-S-5	275	1.79	160	1-3	2-2	20	1220
1-S-6	350	2.25	200	2-3	2-2	24	1345
1-S-7	425	2.71	240	2-3	2-2	28	1520
1-S-8	500	3.17	280	2-3	2-2	32	1635
1-S-9	575	3.63	320	2-3	2-2	36	1820

Width, 26 $\frac{1}{4}$  inches; height, 51 $\frac{1}{4}$  inches; height of water line, 45 inches; smoke collar, 9 inches.

2-S-5	550	3.50	320	2-4	2-4	25	1865
2-S-6	675	4.39	400	2-4	2-4	30	2050
2-S-7	800	5.28	480	2-4	2-4	35	2340
2-S-8	925	6.17	560	2-4	2-4	40	2540
2-S-9	1050	7.06	640	2-4	2-4	45	2840
2-S-10	1175	7.95	720	2-4	2-4	50	3020
2-S-11	1300	8.84	800	3-4	2-4	55	3325

Width 35 $\frac{1}{4}$  inches; height, 57 $\frac{1}{4}$  inches; height of water line, 50 $\frac{1}{4}$  inches; smoke collar, 12 inches.

3-S-6	1500	6.65	590	2-4	2-5	36	3585
3-S-7	1750	8.00	710	3-4	2-5	42	4050
3-S-8	2000	9.35	830	3-4	2-5	48	4450
3-S-9	2250	10.70	950	4-4	2-5	54	4990
3-S-10	2500	12.05	1070	4-4	2-5	60	5450
3-S-11	2750	13.40	1190	4-4	2-5	66	5910
3-S-12	3000	14.75	1310	5-4	2-5	72	6375
3-S-13	3250	16.10	1430	5-4	2-5	78	6850

Width 45 $\frac{1}{4}$  inches; height 63 inches; height of water line, 53 $\frac{1}{2}$  inches; smoke collar, 15 inches.

4-S-7	2750	11.70	950	3-4	2-6	49	5445
4-S-8	3125	13.68	1110	3-4	2-6	56	5975
4-S-9	3500	15.66	1270	4-4	2-6	63	6700
4-S-10	3875	17.64	1430	4-4	2-6	70	7340
4-S-11	4250	19.62	1590	5-4	2-6	77	7990
4-S-12	4625	21.60	1750	5-4	2-6	84	8620
4-S-13	5000	23.58	1910	6-4	2-6	91	9240

Width 53 $\frac{1}{4}$  inches; height, 65 inches; height of water line, 55 $\frac{1}{2}$  inches; smoke collar, 18 inches.

5-S-8	5250	18.83	1281	3-5	2-6	64	9095
5-S-9	5800	21.52	1464	4-5	2-6	72	10000
5-S-10	6350	24.21	1647	4-5	2-6	80	10915
5-S-11	6900	26.90	1830	5-5	2-6	88	11825
5-S-12	7450	21.52	1464	5-5	2-6	96	12735
5-S-13	8000	24.21	1647	5-5	2-6	104	13645
5-S-14	8550	24.21	1647	6-5	2-6	112	14550
5-S-15	9100	26.90	1830	6-5	2-6	120	15460

Width, 63 inches; height, 71 inches; height of water line, 59 $\frac{1}{2}$  inches; smoke collar, 22 inches.

## Steam—Smokeless

Boiler No.	*Recommended Load Sq. Ft. Equivalent Direct Radiation	Grate Area Square Feet	No. AND SIZE INCHES		Length Inches	Approx. Ship. Weight Pounds
			Out- lets	In- lets		
2-S-8-S	925	6.17	2-4	2-4	40	2710
2-S-9-S	1050	7.06	2-4	2-4	45	2900
2-S-10-S	1175	7.95	2-4	2-4	50	3090
2-S-11-S	1300	8.84	3-4	2-4	55	3395
2-S-12-S	1425	9.73	3-4	2-4	60	3585
2-S-13-S	1550	10.62	4-4	2-4	65	3780

Width, 35 $\frac{1}{4}$  inches; height, 57 $\frac{1}{4}$  inches; height of water line, 50 $\frac{1}{4}$  inches; smoke collar, 12 inches.

3-S-8-S	2000	9.35	3-4	2-5	48	4545
3-S-9-S	2250	10.70	4-4	2-5	54	5020
3-S-10-S	2500	12.05	4-4	2-5	60	5450
3-S-11-S	2750	13.40	4-4	2-5	66	5930
3-S-12-S	3000	14.75	5-4	2-5	72	6390
3-S-13-S	3250	16.10	5-4	2-5	78	6855
3-S-14-S	3500	17.45	6-4	2-5	84	7325

Width, 45 $\frac{1}{4}$  inches; height 63 inches; height of water line, 53 $\frac{1}{2}$  inches; smoke collar, 15 inches.

4-S-9-S	3500	15.66	4-4	2-6	63	6340
4-S-10-S	3875	17.64	4-4	2-6	70	7460
4-S-11-S	4250	19.62	5-4	2-6	77	8110
4-S-12-S	4625	21.60	5-4	2-6	84	8750
4-S-13-S	5000	23.58	6-4	2-6	91	9290
4-S-14-S	5375	25.56	6-4	2-6	98	10030

Width, 53 $\frac{1}{4}$  inches; height, 65 inches; height of water line, 55 $\frac{1}{2}$  inches; smoke collar, 18 inches.

5-S-9-S	5800	21.52	4-5	2-6	72	10000
5-S-10-S	6350	24.21	4-5	2-6	80	10915
5-S-11-S	6900	26.90	5-5	2-6	88	11825
5-S-12-S	7450	21.52	5-5	2-6	96	12735
5-S-13-S	8000	24.21	5-5	2-6	104	13645
5-S-14-S	8550	24.21	6-5	2-6	112	14550
5-S-15-S	9100	26.90	6-5	2-6	120	15460

Width, 63 inches; height, 71 inches; height of water line, 59 $\frac{1}{2}$  inches; smoke collar, 22 inches.

\*Based on fuel of 13,000 B.T.U. per pound. For economical operation select boiler based on the direct radiator and piping load, then select from above table.

## Ideal Redflash Boilers

## Ratings and Dimensions

## Water

Boiler No.	*Recommended Load Sq. Ft. Equivalent Direct Water Radiation	Grate Area Square Feet	Fuel Capacity Pounds	No. AND SIZE INCHES		Length Inches	Approx. Ship. Weight Pounds
				Out-lets	In-lets		
1-W-5	440	1.79	160	1-3	2-3	20	1030
1-W-6	560	2.25	200	2-3	2-3	24	1145
1-W-7	680	2.71	240	2-3	2-3	28	1280
1-W-8	800	3.17	280	2-3	2-3	32	1405
1-W-9	920	3.63	320	2-3	2-3	36	1550
1-W-10	1040	4.09	360	3-3	3-3	40	1664

Width, 26 $\frac{1}{4}$  inches; height, 46 $\frac{1}{8}$  inches; smoke collar, 9 inches.

2-W-5	880	3.50	320	2-4	2-4	25	1835
2-W-6	1080	4.39	400	2-4	2-4	30	2010
2-W-7	1280	5.28	480	2-4	2-4	35	2300
2-W-8	1480	6.17	560	2-4	2-4	40	2475
2-W-9	1680	7.06	640	2-4	2-4	45	2770
2-W-10	1880	7.95	720	2-4	2-4	50	2960
2-W-11	2080	8.84	800	3-4	2-4	55	3245

Width, 35 $\frac{1}{4}$  inches; height, 57 $\frac{1}{4}$  inches; smoke collar, 12 inches.

3-W-6	2400	6.65	590	2-4	2-5	36	3570
3-W-7	2800	8.00	710	3-4	2-5	42	4055
3-W-8	3200	9.35	830	3-4	2-5	48	4470
3-W-9	3600	10.70	950	4-4	2-5	54	4950
3-W-10	4000	12.05	1070	4-4	2-5	60	5415
3-W-11	4400	13.40	1190	4-4	2-5	66	5890
3-W-12	4800	14.75	1310	5-4	2-5	72	6335
3-W-13	5200	16.10	1430	5-4	2-5	78	6790

Width, 45 $\frac{1}{4}$  inches; height, 63 inches; smoke collar, 15 inches.

4-W-7	4400	11.70	950	3-4	2-6	49	5500
4-W-8	5000	13.68	1110	3-4	2-6	56	6105
4-W-9	5600	15.66	1270	4-4	2-6	63	6720
4-W-10	6200	17.64	1430	4-4	2-6	70	7345
4-W-11	6800	19.62	1590	5-4	2-6	77	7990
4-W-12	7400	21.60	1750	5-4	2-6	84	8625
4-W-13	8000	23.58	1910	6-4	2-6	91	9260

Width, 53 $\frac{1}{4}$  inches; height, 65 inches; smoke collar, 18 inches.

5-W-8	8400	18.83	1281	3-5	2-6	64	8595
5-W-9	9280	21.52	1464	4-5	2-6	72	9530
5-W-10	10160	24.21	1647	4-5	2-6	80	10460
5-W-11	11040	26.90	1830	5-5	2-6	88	11360
5-W-12	11920	21.52	1464	5-5	2-6	96	12315
5-W-13	12800	24.21	1647	5-5	2-6	104	13240
5-W-14	13680	24.21	1647	6-5	2-6	112	14050
5-W-15	14560	26.90	1830	6-5	2-6	120	14950

Width, 63 inches; height, 71 inches; smoke collar, 22 inches.

## Water—Smokeless

Boiler No.	*Recommended Load Sq. Ft. Direct Water Radiation	Grate Area Square Feet	No. AND SIZE INCHES		Length Inches	Approx. Ship. Weight Pounds
			Out- lets	In- lets		
2-W- 8-S	1480	6. 17	2-4	2-4	40	2580
2-W- 9-S	1680	7. 06	2-4	2-4	45	2880
2-W-10-S	1880	7. 95	2-4	2-4	50	3070
2-W-11-S	2080	8. 84	3-4	2-4	55	3350
2-W-12-S	2280	9. 73	3-4	2-4	60	3580
2-W-13-S	2480	10. 62	4-4	2-4	65	3870

Width, 35 $\frac{1}{4}$  inches; height, 57 $\frac{1}{4}$  inches; smoke collar, 12 inches.

3-W-8-S	3200	9.35	3-4	2-5	48	4575
3-W-9-S	3600	10.70	4-4	2-5	54	5060
3-W-10-S	4000	12.05	4-4	2-5	60	5510
3-W-11-S	4400	13.40	4-4	2-5	66	5990
3-W-12-S	4800	14.75	5-4	2-5	72	6430
3-W-13-S	5200	16.10	5-4	2-5	78	6890
3-W-14-S	5600	17.45	6-4	2-5	84	7375

Width, 45 $\frac{1}{4}$  inches; height, 63 inches; smoke collar, 15 inches.

4-W-9-S	5600	15.66	4-4	2-6	63	6875
4-W-10-S	6200	17.64	4-4	2-6	70	7480
4-W-11-S	6800	19.62	5-4	2-6	77	8155
4-W-12-S	7400	21.60	5-4	2-6	84	8770
4-W-13-S	8000	23.58	6-4	2-6	91	9385
4-W-14-S	8600	25.56	6-4	2-6	98	10050

Width, 53 $\frac{1}{4}$  inches; height, 65 inches; smoke collar, 18 inches.

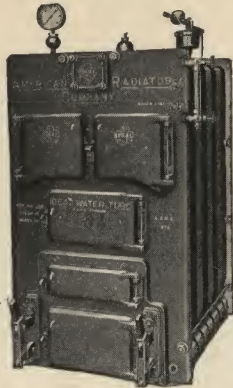
5-W-9-S	9280	21.52	4-5	2-6	72	9790
5-W-10-S	10160	24.21	4-5	2-6	80	10715
5-W-11-S	11040	26.90	5-5	2-6	88	11610
5-W-12-S	11920	21.52	5-5	2-6	96	12585
5-W-13-S	12800	24.21	5-5	2-6	104	13310
5-W-14-S	13680	24.21	6-5	2-6	112	14310
5-W-15-S	14560	26.90	6-5	2-6	120	15220

Width, 63 inches; height, 71 inches; smoke collar, 22 inches.



## 23-Inch Series Ideal Water Tube Boilers

## Steam

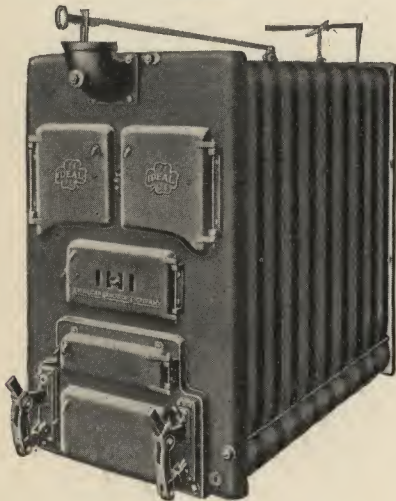


No.	*Recommended Load		Grate Area Sq. Ft.	Fuel Cap. Lbs.	Total Lgth. In.	No. AND SIZE INCHES		CHIMNEY SIZE	
	Equivalent Direct Radiation	Sq. Ft.				Outlets	Inlets	In.	Ht. Ft.
S-2305	450	2.72	164	21	1-4	2-3		8x12	30
S-2306	525	3.36	203	25	1-4	2-3		8x12	35
S-2307	675	4.00	242	29	1-4	2-3		8x12	35
S-2308	750	4.64	281	33	1-4	2-3		8x12	35
S-2309	825	5.28	320	37	1-4	2-3		8x12	40
S-2310	900	5.92	359	41	1-4	2-3		12x12	40

Safety valve sizes accord with A.S.M.E. boiler code.

Steam boiler equipment consists of steam gauge, water column and trimmings, Arco automatic damper regulator, pop safety valve and firing tools.

## Water



No.	*Recommended Load		Grate Area Sq. Ft.	Fuel Cap. Lbs.	Total Lgth. In.	No. AND SIZE INCHES		CHIMNEY SIZE	
	Equivalent Direct Radiation	Sq. Ft.				Outlets	Inlets	In.	Ht. Ft.
W-2305	720	2.72	164	21	1-4	2-3		8x12	30
W-2306	840	3.36	203	25	1-4	2-3		8x12	35
W-2307	1080	4.00	242	29	1-4	2-3		8x12	35
W-2308	1200	4.64	281	33	1-4	2-3		12x12	35
W-2309	1320	5.28	320	37	1-4	2-3		12x12	35
W-2310	1440	5.92	359	41	1-4	2-3		12x12	40

Water boiler equipment consists of Ideal damper control and firing tools.

The 23-Inch Series Ideal Water Tube Boiler is regularly supplied without jacket but will be furnished with Ideal asbestos lined metal jacket on special order.

\*Based on anthracite fuel of 12,500 B.T.U. per pound. For economical operation select boiler based on the direct radiator and piping load, then select from above table.

## Ideal Water Tube Boilers

## Steam

No.	*Recommended Load		Grate Area Sq. Ft.	Fuel Cap. Lbs.	Total Lgth. In.	No. AND SIZE INCHES		CHIMNEY SIZE	
	Equivalent Direct Radiation	Sq. Ft.				Outlets	Inlets	In.	Ht. Ft.
S-2905	800	4.84	350	30	1-5	2-4		12x16	35
S-2906	1000	6.05	437	36	1-5	2-4		12x16	40
S-2907	1200	7.26	523	42	1-5	2-4		16x16	40
S-2908	1400	8.47	611	48	1-5	2-4		16x16	45
S-2909	1600	9.68	699	54	2-5	2-4		16x20	50
S-2910	1800	10.89	787	60	2-5	2-4		16x20	55
S-3606	1850	7.50	684	36	1-6	2-4		16x20	45
S-3607	2175	9.00	828	42	2-6	2-4		16x20	50
S-3608	2500	10.50	972	48	2-6	2-4		20x20	50
S-3609	2825	12.00	1116	54	2-6	2-4		20x20	55
S-3610	3150	13.50	1260	60	2-6	2-4		20x20	55
S-3611	3475	15.00	1404	66	2-6	2-4		20x20	60
S-3612	3800	16.50	1548	72	2-6	2-4		20x24	60
S-3613	4125	18.00	1692	78	2-6	2-4		20x24	65
S-3614	4450	19.50	1836	84	2-6	2-4		20x24	70
S-3615	4775	21.00	1980	90	2-6	2-4		24x24	75
S-4807	5875	21.60	1770	68½	3-6	4-4		24x24	70
S-4808	7125	25.20	2065	79¼	3-6	4-4		24x24	75
S-4809	7750	25.20	2065	90	3-6	4-4		24x28	80
S-4810	8375	28.80	2360	100¾	3-6	4-4		24x28	85
S-4811	9000	28.80	2360	111½	4-6	4-4		28x28	95
S-4812	9625	28.80	2360	122¼	4-6	4-4		28x28	100
S-4813	10250	32.40	2655	133	4-6	4-4		28x32	105
S-4814	10875	32.40	2655	143¾	4-6	4-4		28x32	110
S-7909	8000	21.90	2484	60	1-10	1-4		24x28	85
S-7910	9000	24.90	2760	66	1-10	1-4		24x28	90
S-7911	10000	28.00	3036	72	2-10	1-4		24x28	95
S-7912	11000	31.10	3312	78	2-10	1-4		28x28	100
S-7913	12000	34.20	3588	84	2-10	1-4		30x30	105
S-7914	13000	37.30	3864	90	2-10	1-4		30x36	110
S-7915	14000	34.20	3450	96	2-10	1-4		30x36	115
S-7916	14000	34.20	3450	102	2-10	1-4		36x36	120
S-7917	15000	37.30	3726	108	2-10	1-4		36x36	125

Steam boiler equipment consists of steam gauge, water column and trimmings, Arco automatic damper regulator pop safety valve and firing tools.

## Water

No.	*Recommended Load		Grate Area Sq. Ft.	Fuel Cap. Lbs.	Total Lgth. In.	No. AND SIZE INCHES		CHIMNEY SIZE	
	Equivalent Direct Radiation	Sq. Ft.				Outlets	Inlets	In.	Ht. Ft.
W-2905	1280	4.84	350	30	1-5	2-4		12x16	35
W-2906	1600	6.05	437	36	1-5	2-4		12x16	40
W-2907	1920	7.26	523	42	2-5	2-4		16x16	40
W-2908	2240	8.47	611	48	2-5	2-4		16x16	45
W-2909	2560	9.68	699	54	2-5	2-4		16x20	50
W-2910	2880	10.89	787	60	2-5	2-4		16x20	55
W-3606	2960	7.50	684	36	1-6	2-4		16x20	45
W-3607	3480	9.00	828	42	2-6	2-3½	2-4	16x20	50
W-3608	4000	10.50	972	48	2-6	2-3½	2-4	20x20	50
W-3609	4520	12.00	1116	54	2-6	2-3½	2-4	20x20	55
W-3610	5040	13.50	1260	60	2-6	2-3½	2-4	20x20	55
W-3611	5560	15.00	1404	66	2-6	2-3½	2-4	20x20	60
W-3612	6080	16.50	1548	72	2-6	4-3½	2-4	20x24	60
W-3613	6600	18.00	1692	78	2-6	4-3½	2-4	20x24	65
W-3614	7120	19.50	1836	84	2-6	4-3½	2-4	20x24	70
W-3615	7640	21.00	1980	90	2-6	4-3½	2-4	24x24	75
W-4807	9400	21.60	1770	68½	3-6	4-6		24x24	70
W-4808	11400	25.20	2065	79¼	3-6	4-6		24x24	75
W-4809	12400	25.20	2065	90	3-6	4-6		24x28	80
W-4810	13400	28.80	2360	100¾	3-6	4-6		24x28	85
W-4811	14400	28.80	2360	111½	4-6	4-6		28x28	95
W-4812	15400	28.80	2360	122¼	4-6	4-6		28x28	100
W-4813	16400	32.40	2655	133	4-6	4-6		28x32	105
W-4814	17400	32.40	2655	143¾	4-6	4-6		28x32	110
W-7909	12800	21.90	2484	60	1-10	2-10		24x28	85
W-7910	14400	24.90	2760	66	1-10	2-10		24x28	90
W-7911	16000	28.00	3036	72	2-10	2-10		24x28	95
W-7912	17600	31.10	3312	78	2-10	2-10		28x28	100
W-7913	19200	34.20	3588	84	2-10	2-10		30x30	105
W-7914	20800	37.30	3864	90	2-10	2-10		30x36	110
W-7915	22400	34.20	3450	96	2-10	2-10		30x36	115
W-7916	22400	34.20	3450	102	2-10	2-10		36x36	120
W-7917	24000	37.30	3726	108	2-10	2-10		36x36	125

Water boiler equipment consists of Ideal damper control and firing tools.

\*Based on anthracite fuel of 12,500 B.T.U. per pound. For economical operation select boiler based on the direct radiator and piping load, then select from above table.



### Ideal Arco Round Steam Boilers

For Hard or Soft Coal, Coke, Gas and Oil Fuel



The steam dome is unusually broad and high. This gives a wide steam disengaging area and ample storage space. A steady, silent flow of steam through piping and radiators is insured.

Grate area, fire contact heating surface, flue area and staggered gas travel are scientifically proportioned to insure quick, dependable and economical heating service.

The substantial character of all doors, frames, hinge pins, etc., insures durable service.

Contact faces on all doors are machine-ground, securing a leak-proof construction and giving superior control of combustion.

Shaking mechanism is sturdy and duly proportioned to make caretaking easy.

Draft control is at the rear, eliminating the usual interfering chains in front. This control is sensitive, dependable and positive in operation.

Fire pot is made with a third nipple, which gives quick heating response. It effects a steady, unrestricted, rapid water flow within the boiler, which means a rapid absorption and quick delivery of the heat of combustion.

Grate bars are especially trussed, and their teeth carefully spaced to insure uniform combustion and a minimum loss of heat in the ash.

Base is large and substantial, providing ample space for the ashes, insuring durable service and making caretaking just as easy as possible.

Equipped with an improved type, all metal pressure regulator. Extreme sensitiveness is obtained by a new design of rocker movement and two weights. The bellows is made of a single piece of seamless brass. No parts to wear out.

No.	*Recommended Load Sq. Ft. Equivalent Direct Radiation	Water Line In.	Grate Area In.	Hard Coal Cap. Lbs.	Size Outlet and Inlet In.	Width at Base In.	Height Over All In.	Chimney Size In.
S-1704	200	47	1.40	142	2 1/2	24 3/4	64	8x 8
S-1705	250	51	1.40	142	2 1/2	24 3/4	68 1/2	8x 8
S-1706	250	56	1.40	142	2 1/2	24 3/4	73	8x 8
S-1904	250	45	1.88	173	2 1/2	27 1/4	63 1/2	8x 8
S-1905	300	50	1.88	173	2 1/2	27 1/4	68	8x 8
S-1906	350	55	1.88	173	2 1/2	27 1/4	72 3/4	8x 8
S-2004	350	46	2.23	208	3	29	62 1/2	8x 8
S-2005	400	51	2.23	208	3	29	67 1/4	8x 8
S-2006	400	55	2.23	208	3	29	71 3/4	8x12
S-2204	400	47	2.62	282	3	30	65 3/4	8x12
S-2205	450	52	2.62	282	3	30	70 1/4	8x12
S-2206	500	56	2.62	282	3	30	75	8x12
S-2504	550	48	3.53	338	3 1/2	33 1/4	68	8x12
S-2505	600	53	3.53	338	3 1/2	33 1/4	72 3/4	8x12
S-2506	650	58	3.53	338	3 1/2	33 1/4	77 3/4	8x12
S-2804	700	49	4.36	496	4	36 3/4	69 3/4	8x12
S-2805	750	54	4.36	496	4	36 3/4	74 3/4	12x12
S-2806	800	59	4.36	496	4	36 3/4	80	12x12

\*Based on anthracite fuel of 12,500 B. T. U. per pound. For economical operation select boiler based on the direct radiator and piping load, then select from above table.

### Ideal Arco Round Water Boilers

For Hard or Soft Coal, Coke, Gas and Oil Fuel

Water Boiler Capacities—320 to 1280 Square Feet



One of the first requisites of a good boiler is a large direct heating surface; that is, a large surface must be exposed to the fire in order that as much heat as possible may be absorbed direct from the glowing coals and flames. It is also important that this combustion chamber be of generous size so that it can hold enough fuel to last for long periods and so preclude the necessity of frequent trips to the cellar to attend to the fire. The combustion chamber of the Arco Round Boiler is wide, deep, and correctly proportioned to obtain these results.

Because of the boiler's large heat-absorbing surface, the water is heated quickly and efficiently. Steam or hot water is on its way to the radiators soon after the starting of the fire, and a maximum amount of the heat value of the fuel is made available for heating service.

The economy and large fuel carrying capacity of the Arco Round Boiler make frequent attention unnecessary. Once in the morning and once at night is all the attention it needs in the coldest weather; while in moderate weather even less attention is required. With hard coal or with soft coal, an Arco Round Boiler easily holds its fire overnight, ready for quick heating service on the coldest winter mornings.

At a small additional cost the Arco Round Boiler may be equipped with an Arco Water Regulator of all-metal construction insuring permanent efficiency. The first cost, which is moderate, is the last.

No.	*Recommended Load Sq. Ft. Equivalent Direct Water Radiation	Grate Area Sq. Ft.	Hard Coal Fuel Cap. Lbs.	†Size Outlet and Inlet In.	Width at Base In.	Height Overall In.	Chimney Size In.
W-1704	320	1.40	142	2 1/2	24 3/4	58	8x 8
W-1705	400	1.40	142	2 1/2	24 3/4	62 1/2	8x 8
W-1706	400	1.40	142	2 1/2	24 3/4	67	8x 8
W-1904	400	1.88	173	2 1/2	27 1/4	57	8x 8
W-1905	480	1.88	173	2 1/2	27 1/4	61 1/2	8x 8
W-1906	560	1.88	173	2 1/2	27 1/4	66	8x 8
W-2004	560	2.23	208	3	29	56 1/2	8x 8
W-2005	640	2.23	208	3	29	61 1/2	8x 8
W-2006	640	2.23	208	3	29	65 3/4	8x12
W-2204	640	2.62	282	3	30	59	8x12
W-2205	720	2.62	282	3	30	63 1/4	8x12
W-2206	800	2.62	282	3	30	68 1/4	8x12
W-2504	880	3.53	338	3 1/2	33 1/4	60	8x12
W-2505	960	3.53	338	3 1/2	33 1/4	64 3/4	8x12
W-2506	1040	3.53	338	3 1/2	33 1/4	70	8x12
W-2804	1120	4.36	496	4	36 3/4	63	8x12
W-2805	1200	4.36	496	4	36 3/4	68	12x12
W-2806	1280	4.36	496	4	36 3/4	73 1/4	12x12

\*Based on anthracite fuel of 12,500 B. T. U. per pound. For economical operation select boiler based on the direct radiator and piping load, then select from above table.

†Water boilers have two outlets and two inlets.



## Ideal Hot Water Supply Boilers

## Cast Iron



No. 02 Ideal

When hot water supply boilers are subjected to some unusual pressure, as is the case when tanks are connected direct to city pumping station, and the pressure is increased during times of conflagration or the like, it is recommended that the system be equipped with a water-pressure reducing

valve and relief valve.



No. 09 Ideal

No.	Style of Grate	Diameter of Grate Inches	Grate Area Square Feet	No. and Size Outlets and Inlets Inches	Nominal Capacities Gallons per Hour	Approx. Ship. Wt. Pounds
01	Slide	10	.59	1-1½	56	170
02	Slide	10	.54	1-1½	93	230
03	Slide	10	.59	1-1½	144	270
04	Rocking	12	.80	3-1½	192	450
05	Rocking	12	.80	3-1½	210	510
06	Rocking	15	1.23	3-2	384	570
07	Rocking	15	1.23	3-2	426	670
08	Rocking	18	1.92	3-2	600	750
09	Rocking	18	1.92	3-2	660	890

Maximum working pressure, 80 pounds per square inch. No firing tools furnished. Ratings gallons per hour based on 25-degree rise on 8-hour firing period, with hard coal.

## Ideal Arcola Heaters

PATENTED JANUARY 18, 1921. OTHER PATENTS PENDING



The Ideal Arcola Heater is peculiarly adapted for use in those two and three-story flat buildings and combination store and flat buildings where each tenant prefers to run his own heating outfit to suit his family's needs or preference as to exact degree of warmth, and without going to a cellar to attend the fire.

*Recommended Load				*Recommended Load			
No.	No. Sections	Equivalent Direct Water Radiation	App. Ship. Wt., Lbs.	No.	No. Sections	Equivalent Direct Water Radiation	App. Ship. Wt., Lbs.
4-H	4	150	454	7-H	7	300	678
5-H	5	200	522	8-H	8	350	737
6-H	6	250	597	9-H	9	400	824

\*Based on anthracite fuel of 12,500 B.T.U. per pound. For economical operation select boiler based on the direct radiator and piping load, then select from above table.

Arcola Automatic Heat Regulators  
For Ideal Arcola Heaters

Ideal Arcola Heat Regulator

The Arcola Automatic Heat Regulator is designed for use on the Ideal Arcola Heater. The Arcola Heater is not regularly furnished with this automatic regulator but it can be added at any time.

The regulating handle on the graduated dial at the rear need only be turned for more or less heat as required.

Setting the handle adjusts the automatic mechanism. The frictionless operating draft panel at the base, maintains a precise and automatic control over the supply of air admitted to support combustion. No air may enter the fire chamber at any other place, for the gas-tight construction formed by the water-surrounded ash pit seals the combustion chamber.

A simple turn of the heat regulator is all that is required to maintain any desired temperature in the home. Ease and economy of operation are combined.

Prices upon application.

## Ideal Arcola Equipment

## Expansion Tanks and Trimmings



Price, with Trimmings.....each \$7.00

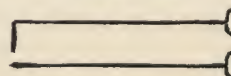
## Ashpans



For Ideal Arcola Heaters

No.	4H	5H	6H
Price .....	each \$1.20	1.25	1.35
No.	7H	8H	9H
Price .....	each \$1.45	1.55	1.65

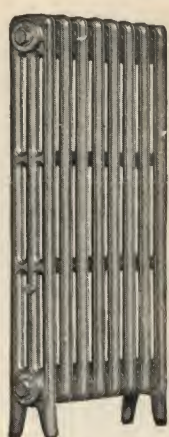
## Firing Tools



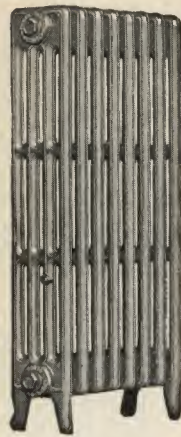
Length.....	inches	24	30	36
Price, Nickel-Plated.....	each	\$ .25	.25	.75



### Corto Radiators For Steam or Water



3-Tube Corto



4-Tube Corto

#### 3-Tube

Width, 4 $\frac{1}{2}$  Inches; Centers, 2 $\frac{1}{2}$  Inches

Number of Sections	†Length 2 $\frac{1}{2}$ In. per Section	*HEATING SURFACE, SQUARE FEET				
		20-Inch Height 1 $\frac{3}{4}$ Sq. Ft. per Section	23-Inch Height 2 Sq. Ft. per Section	26-Inch Height 2 $\frac{1}{2}$ Sq. Ft. per Section	32-Inch Height 3 Sq. Ft. per Section	38-Inch Height 3 $\frac{1}{2}$ Sq. Ft. per Section
2	5	3 $\frac{1}{2}$	4	4 $\frac{2}{3}$	6	7
3	7 $\frac{1}{2}$	5 $\frac{1}{4}$	6	7	9	10 $\frac{1}{2}$
4	10	7	8	9 $\frac{1}{3}$	12	14
5	12 $\frac{1}{2}$	8 $\frac{3}{4}$	10	11 $\frac{2}{3}$	15	17 $\frac{1}{2}$
6	15	10 $\frac{1}{2}$	12	14	18	21
7	17 $\frac{1}{2}$	12 $\frac{1}{4}$	14	16 $\frac{1}{3}$	21	24 $\frac{1}{2}$
8	20	14	16	18 $\frac{2}{3}$	24	28
9	22 $\frac{1}{2}$	15 $\frac{3}{4}$	18	21	27	31 $\frac{1}{2}$
10	25	17 $\frac{1}{2}$	20	23 $\frac{2}{3}$	30	35
11	27 $\frac{1}{2}$	19 $\frac{1}{4}$	22	25 $\frac{2}{3}$	33	38 $\frac{1}{2}$
12	30	21	24	28	36	42
13	32 $\frac{1}{2}$	22 $\frac{3}{4}$	26	30 $\frac{1}{3}$	39	45 $\frac{1}{2}$
14	35	24 $\frac{1}{2}$	28	32 $\frac{2}{3}$	42	49
15	37 $\frac{1}{2}$	26 $\frac{1}{4}$	30	35	45	52 $\frac{1}{2}$
16	40	28	32	37 $\frac{2}{3}$	48	56
17	42 $\frac{1}{2}$	29 $\frac{3}{4}$	34	39 $\frac{2}{3}$	51	59 $\frac{1}{2}$
18	45	31 $\frac{1}{2}$	36	42	54	63
19	47 $\frac{1}{2}$	33 $\frac{1}{4}$	38	44 $\frac{1}{3}$	57	66 $\frac{1}{2}$
20	50	35	40	46 $\frac{2}{3}$	60	70

#### 4-Tube

Width, 6 $\frac{5}{16}$  Inches; Centers, 2 $\frac{1}{2}$  Inches

Number of Sections	†Length 2 $\frac{1}{2}$ In. per Section	*HEATING SURFACE, SQUARE FEET				
		20-Inch Height 2 $\frac{1}{4}$ Sq. Ft. per Section	23-Inch Height 2 $\frac{1}{2}$ Sq. Ft. per Section	26-Inch Height 2 $\frac{3}{4}$ Sq. Ft. per Section	32-Inch Height 3 $\frac{1}{2}$ Sq. Ft. per Section	38-Inch Height 4 $\frac{1}{4}$ Sq. Ft. per Section
2	5	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	7	8 $\frac{1}{2}$
3	7 $\frac{1}{2}$	6 $\frac{3}{4}$	7 $\frac{1}{2}$	8 $\frac{1}{4}$	10 $\frac{1}{2}$	12 $\frac{3}{4}$
4	10	9	10	11	14	17
5	12 $\frac{1}{2}$	11 $\frac{1}{4}$	12 $\frac{1}{2}$	13 $\frac{3}{4}$	17 $\frac{1}{2}$	21 $\frac{1}{4}$
6	15	13 $\frac{1}{2}$	15	16 $\frac{1}{2}$	21	25 $\frac{1}{2}$
7	17 $\frac{1}{2}$	15 $\frac{3}{4}$	17 $\frac{1}{2}$	19 $\frac{1}{4}$	24 $\frac{1}{2}$	29 $\frac{3}{4}$
8	20	18	20	22	28	34
9	22 $\frac{1}{2}$	20 $\frac{1}{4}$	22 $\frac{1}{2}$	24 $\frac{3}{4}$	31 $\frac{1}{2}$	38 $\frac{1}{4}$
10	25	22 $\frac{1}{2}$	25	27 $\frac{1}{2}$	35	42 $\frac{1}{2}$
11	27 $\frac{1}{2}$	24 $\frac{3}{4}$	27 $\frac{1}{2}$	30 $\frac{1}{4}$	38 $\frac{1}{2}$	46 $\frac{3}{4}$
12	30	27	30	33	42	51
13	32 $\frac{1}{2}$	29 $\frac{1}{4}$	32 $\frac{1}{2}$	35 $\frac{3}{4}$	45 $\frac{1}{2}$	55 $\frac{1}{4}$
14	35	31 $\frac{1}{2}$	35	38 $\frac{1}{2}$	49	59 $\frac{1}{2}$
15	37 $\frac{1}{2}$	33 $\frac{3}{4}$	37 $\frac{1}{2}$	41 $\frac{1}{4}$	52 $\frac{1}{2}$	63 $\frac{3}{4}$
16	40	36	40	44	56	68
17	42 $\frac{1}{2}$	38 $\frac{1}{4}$	42 $\frac{1}{2}$	46 $\frac{3}{4}$	59 $\frac{1}{2}$	72 $\frac{1}{4}$
18	45	40 $\frac{1}{2}$	45	49 $\frac{1}{2}$	63	76 $\frac{1}{2}$
19	47 $\frac{1}{2}$	42 $\frac{3}{4}$	47 $\frac{1}{2}$	52 $\frac{1}{4}$	66 $\frac{1}{2}$	80 $\frac{3}{4}$
20	50	45	50	55	70	85

\*Based upon engineering standard of 240 B.t.u. emission per square foot per hour.

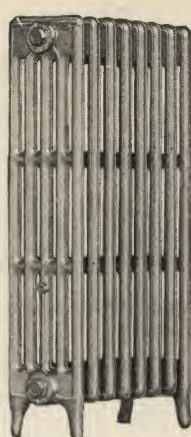
†Add  $\frac{1}{2}$  inch to length for each bushing.

TAPPINGS.—1 $\frac{1}{2}$ -inch top and bottom. Bushed for steam or water as per specifications.

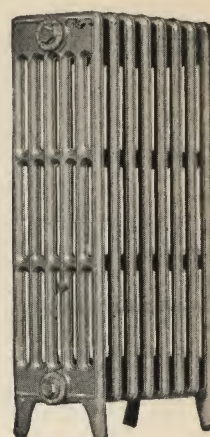
CONNECTIONS.—Both steam and water—extra heavy 1 $\frac{1}{2}$ -inch right and left threaded nipples at top and bottom.

Shipping weight, approximately 5 $\frac{1}{2}$  pounds per square foot.

### Corto Radiators For Steam or Water



5-Tube Corto



6-Tube Corto

#### 5-Tube

Width, 8 Inches; Centers, 2 $\frac{1}{2}$  Inches

Number of Sections	†Length 2 $\frac{1}{2}$ In. per Section	*HEATING SURFACE, SQUARE FEET				
		20-Inch Height 2 $\frac{3}{4}$ Sq. Ft. per Section	23-Inch Height 3 Sq. Ft. per Section	26-Inch Height 3 $\frac{1}{2}$ Sq. Ft. per Section	32-Inch Height 4 $\frac{1}{2}$ Sq. Ft. per Section	38-Inch Height 5 Sq. Ft. per Section
2	5	5 $\frac{1}{3}$	6	7	8 $\frac{2}{3}$	10
3	7 $\frac{1}{2}$	8	9	10 $\frac{1}{2}$	13	15
4	10	10 $\frac{2}{3}$	12	14	17 $\frac{1}{3}$	20
5	12 $\frac{1}{2}$	13 $\frac{1}{3}$	15	17 $\frac{1}{2}$	21 $\frac{2}{3}$	25
6	15	16	18	21	26	30
7	17 $\frac{1}{2}$	18 $\frac{2}{3}$	21	24 $\frac{1}{2}$	30 $\frac{1}{3}$	35
8	20	21 $\frac{1}{3}$	24	28	34 $\frac{2}{3}$	40
9	22 $\frac{1}{2}$	24	27	31 $\frac{1}{2}$	39	45
10	25	26 $\frac{2}{3}$	30	35	43 $\frac{1}{3}$	50
11	27 $\frac{1}{2}$	29 $\frac{1}{3}$	33	38 $\frac{1}{2}$	47 $\frac{2}{3}$	55
12	30	32	36	42	52	60
13	32 $\frac{1}{2}$	34 $\frac{2}{3}$	39	45 $\frac{1}{2}$	56 $\frac{1}{3}$	65
14	35	37 $\frac{1}{3}$	42	49	60 $\frac{2}{3}$	70
15	37 $\frac{1}{2}$	40	45	52 $\frac{1}{2}$	65	75
16	40	42 $\frac{2}{3}$	48	56	69 $\frac{1}{3}$	80
17	42 $\frac{1}{2}$	45 $\frac{1}{3}$	51	59 $\frac{1}{2}$	73 $\frac{2}{3}$	85
18	45	48	54	63	78	90
19	47 $\frac{1}{2}$	50 $\frac{2}{3}$	57	66 $\frac{1}{2}$	82 $\frac{1}{3}$	95
20	50	53 $\frac{1}{3}$	60	70	86 $\frac{2}{3}$	100

#### 6-Tube

Width, 9 $\frac{1}{16}$  Inches; Centers, 2 $\frac{1}{2}$  Inches

Number of Sections	†Length 2 $\frac{1}{2}$ In. per Section	*HEATING SURFACE, SQUARE FEET				
		20-Inch Height 3 Sq. Ft. per Section	23-Inch Height 3 $\frac{1}{2}$ Sq. Ft. per Section	26-Inch Height 4 Sq. Ft. per Section	32-Inch Height 5 Sq. Ft. per Section	38-Inch Height 6 Sq. Ft. per Section
2	5	6	7	8	10	12
3	7 $\frac{1}{2}$	9	10 $\frac{1}{2}$	12	15	18
4	10	12	14	16	20	24
5	12 $\frac{1}{2}$	15	17 $\frac{1}{2}$	20	25	30
6	15	18	21	24	30	36
7	17 $\frac{1}{2}$	21	24 $\frac{1}{2}$	28	35	42
8	20	24	28	32	40	48
9	22 $\frac{1}{2}$	27	31 $\frac{1}{2}$	36	45	54
10	25	30	35	40	50	60
11	27 $\frac{1}{2}$	33	38 $\frac{1}{2}$	44	55	66
12	30	36	42	48	60	72
13	32 $\frac{1}{2}$	39	45 $\frac{1}{2}$	52	65	78
14	35	42	49	56	70	84
15	37 $\frac{1}{2}$	45	52 $\frac{1}{2}$	60	75	90
16	40	48	56	64	80	96
17	42 $\frac{1}{2}$	51	59 $\frac{1}{2}$	68	85	102
18	45	54	63	72	90	108
19	47 $\frac{1}{2}$	57	66 $\frac{1}{2}$	76	95	114
20	50	60	70	80	100	120

\*Based upon engineering standard of 240 B.t.u. emission per square foot per hour.

†Add  $\frac{1}{2}$  inch to length for each bushing.

TAPPINGS.—1 $\frac{1}{2}$ -inch top and bottom. Bushed for steam or water as per specifications.

CONNECTIONS.—Both steam and water—extra heavy 1 $\frac{1}{2}$ -inch right and left threaded nipples at top and bottom.

Shipping weight, approximately 5 $\frac{1}{2}$  pounds per square foot.



**Corto Window Radiators**

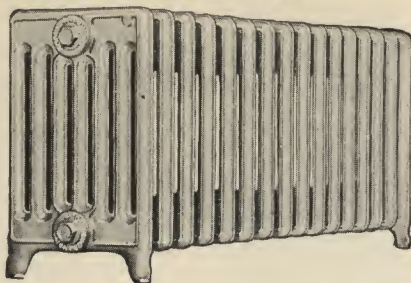
For Steam or Water

Width, 11 $\frac{1}{2}$  Inches; Centers, 2 $\frac{1}{2}$  Inches

Add  $\frac{1}{2}$  inch to length for each bushing.

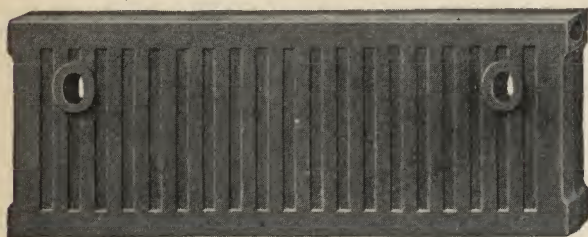
**TAPPINGS.**—1 $\frac{1}{2}$ -inch top and bottom, bushed for steam or water.

**CONNECTIONS.**—Extra heavy 1 $\frac{1}{2}$ -inch right and left threaded nipples at top and bottom. Shipping weight, approx. 5 $\frac{1}{2}$  pounds per sq. ft.

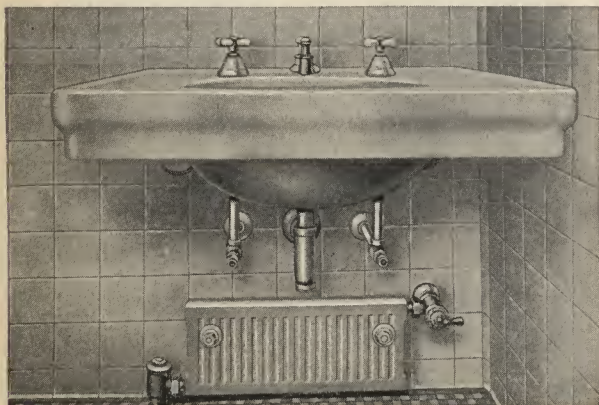


Number of Sections	Length 2 $\frac{1}{2}$ In. per Section	*HEATING SURFACE, SQUARE FEET		
		14-Inch Height 2 $\frac{1}{2}$ Sq. Ft.	17-Inch Height 3 Sq. Ft.	20-Inch Height 3 $\frac{3}{8}$ Sq. Ft.
2	5	5	6	7 $\frac{1}{3}$
3	7 $\frac{1}{2}$	7 $\frac{1}{2}$	9	11
4	10	10	12	14 $\frac{2}{3}$
5	12 $\frac{1}{2}$	12 $\frac{1}{2}$	15	18 $\frac{1}{3}$
6	15	15	18	22
7	17 $\frac{1}{2}$	17 $\frac{1}{2}$	21	25 $\frac{2}{3}$
8	20	20	24	29 $\frac{1}{3}$
9	22 $\frac{1}{2}$	22 $\frac{1}{2}$	27	33
10	25	25	30	36 $\frac{2}{3}$
11	27 $\frac{1}{2}$	27 $\frac{1}{2}$	33	40 $\frac{1}{3}$
12	30	30	36	44
13	32 $\frac{1}{2}$	32 $\frac{1}{2}$	39	47 $\frac{2}{3}$
14	35	35	42	51 $\frac{1}{3}$
15	37 $\frac{1}{2}$	37 $\frac{1}{2}$	45	55
16	40	40	48	58 $\frac{2}{3}$
17	42 $\frac{1}{2}$	42 $\frac{1}{2}$	51	62 $\frac{1}{3}$
18	45	45	54	66
19	47 $\frac{1}{2}$	47 $\frac{1}{2}$	57	69 $\frac{2}{3}$
20	50	50	60	73 $\frac{1}{3}$

\*Based upon engineering standard of 210 B. t. u. emission per sq. ft. per hr.

**Peerless Bathroom Radiators**

Designed especially for the warming of small bathrooms. Easily fastened to wall by lag screws or hooks. When harmoniously enameled its appearance is most pleasing.



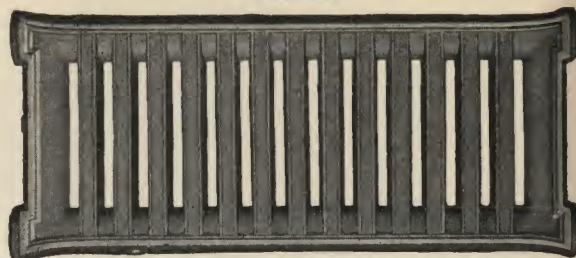
Heating surface, 3 $\frac{1}{2}$  square feet. Wall area, 1.15 square feet. Two  $\frac{1}{2}$ -inch tappings. Weight, 21 pounds.

Price.....each.....

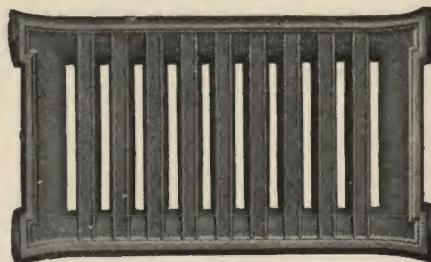
**Cast Iron Wall Radiators**

For Steam or Water

Peerless



No. 9A



No. 7A



No. 5A



No. 7B



No. 9B

Sections 5A, 7A, and 9A have bars running crosswise of the section and tapped 1 $\frac{1}{2}$  inches for connecting end to end.

Sections 7B and 9B have bars running the long way of the section and are regularly tapped 1 $\frac{1}{2}$  inches to be connected side by side. The sections are connected by 1 $\frac{1}{2}$ -inch right and left-hand internal nipples. Tappings may be bushed if desired.

Special tappings at extra charge.

No.	Height Inches	Length or Width Inches	Thick- ness Inches	Thickness with Bracket Inches	Heating Surface Sq. Feet	Price per Sq. Ft.
5A	13 $\frac{5}{8}$	16 $\frac{5}{8}$	2 $\frac{7}{8}$	3 $\frac{1}{2}$	5	....
7A	13 $\frac{5}{8}$	21 $\frac{7}{8}$	2 $\frac{7}{8}$	3 $\frac{1}{2}$	7	....
7B	21 $\frac{7}{8}$	13 $\frac{5}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	7	....
9A	13 $\frac{5}{8}$	29 $\frac{1}{8}$	2 $\frac{7}{8}$	3 $\frac{1}{2}$	9	....
9B	29 $\frac{1}{8}$	13 $\frac{5}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	9	....

Special catalogue and prices furnished upon application.



## Wall Radiator Brackets

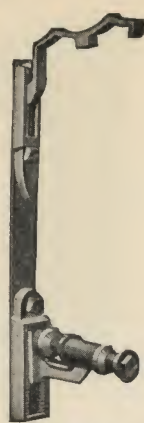
New Arco Adjustable  
PATENTED

Has vertical adjustment of 2 inches. The outer face of the radiator sets  $4\frac{3}{4}$  inches from the wall. The spools on the bottom bracket allow horizontal movement for expansion and contraction. The malleable iron finger of the top guides it and keeps it from tipping forward. Single spool bracket for one run of wall radiation. Double spool bracket for two runs of wall radiation.

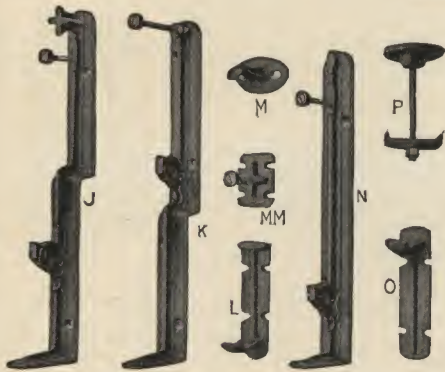
Price, for Single Spool Bracket.....each \$2.50  
Price, for Double Spool Bracket.....each 4.50



Single Spool Bracket



Double Spool Bracket



Regular Pattern

J brackets fit over a  $9\frac{1}{2}$ -inch high baseboard for supporting wall radiators Nos. 7B and 9B. One  $\frac{1}{4}$ -inch bolt and button furnished with each bracket.

K brackets to fit over baseboard for supporting wall radiators Nos. 5A, 7A and 9A. One  $\frac{1}{4}$ -inch stove bolt and button furnished with each bracket.

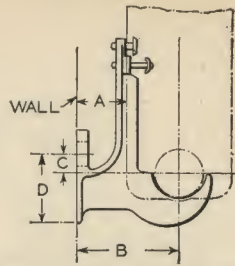
Brackets, L, O, MM and M are screwed to wall baseboard or wainscoting. L and O brackets are bottom supports for all sizes of wall radiators. MM and M brackets are top guides to hold radiator in place. L and MM brackets are concealed; O and M brackets are not. One MM and M bracket should be used with each L or O bracket. L, O and MM brackets are slotted for four, and the M bracket for two wood screws, one  $\frac{1}{4}$ -inch stove bolt and button furnished with each MM bracket.

Bracket N is a straight right angle bracket, without offset, for supporting all sizes of wall radiators; height from floor to center of end tapping bosses,  $5\frac{1}{2}$  inches. One  $\frac{1}{4}$ -inch stove bolt and button with each N bracket.

Ceiling bracket P is made of cast plate,  $3\frac{1}{2}$ -inch diameter and screwed to ceiling joists by four screws. The bolt furnished gives a distance of  $3\frac{1}{2}$  inches to 5 inches from bottom of radiator to ceiling. Other length bolts furnished on special order.

NOTE.—In ordering buttons and stove bolts separately state for which bracket.

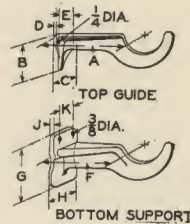
No.	Height from Floor to Center of Supply or Return End of Lowest Tapping	Each
J-1	$9\frac{1}{2}$ Inches.....	\$ .80
J-2	$7\frac{1}{2}$ Inches.....	.75
J-3	$5\frac{1}{2}$ Inches.....	.70
K-1	16 Inches for $11\frac{1}{2}$ -Inch Baseboard.....	.88
K-2	14 Inches for $7\frac{1}{2}$ -Inch Baseboard.....	.84
K-3	12 Inches for $9\frac{1}{2}$ -Inch Baseboard.....	.80
K-4	10 Inches for $5\frac{1}{2}$ Inches.....	.76
K-5	8 Inches for $3\frac{1}{2}$ Inches.....	.72
K-6	6 Inches for $1\frac{1}{2}$ Inches.....	.68
L, M, MM, O.....		.20
N.....		.75
P- $3\frac{1}{2}$ to 5 Ext.....		.50

American Corto  
Radiator Brackets

Made of Malleable Iron

DIMENSIONS, INCHES						
	B					
A	3-Tube	4-Tube	5-Tube	6-Tube	7-Tube Window	C
2	$4\frac{5}{16}$	$5\frac{5}{16}$	6	$6\frac{7}{8}$	$7\frac{3}{4}$	$\frac{7}{8}$
3	$5\frac{5}{16}$	$6\frac{3}{16}$	7	$7\frac{7}{8}$	$8\frac{3}{4}$	$1\frac{3}{8}$
4	$6\frac{3}{16}$	$7\frac{3}{16}$	8	$8\frac{7}{8}$	$9\frac{3}{4}$	$1\frac{3}{8}$
5	$7\frac{3}{16}$	$8\frac{3}{16}$	9	$9\frac{7}{8}$	$10\frac{3}{4}$	$1\frac{3}{8}$
						D
						$4\frac{3}{8}$

## Corto Concealed Radiator Brackets



## Top Bracket

Type of Radiator	DIMENSIONS, INCHES				
	A	B	C	D	E
3-Tube.....	$3\frac{11}{16}$	$2\frac{5}{8}$	$1\frac{3}{4}$	$\frac{5}{16}$	1
4-Tube.....	$4\frac{1}{2}$	$2\frac{5}{8}$	$1\frac{3}{4}$	$\frac{5}{16}$	1
5-Tube.....	$5\frac{3}{8}$	$2\frac{5}{8}$	$1\frac{3}{4}$	$\frac{5}{16}$	1
6-Tube.....	$6\frac{3}{16}$	$2\frac{5}{8}$	$1\frac{3}{4}$	$\frac{5}{16}$	1
7-Tube Window..	7	$2\frac{5}{8}$	$1\frac{3}{4}$	$\frac{5}{16}$	1

## Bottom Bracket

Type of Radiator	DIMENSIONS, INCHES				
	F	G	H	J	K
3-Tube.....	$3\frac{11}{16}$	$4\frac{3}{8}$	$2\frac{1}{4}$	$\frac{1}{2}$	$1\frac{1}{4}$
4-Tube.....	$4\frac{1}{2}$	$4\frac{3}{8}$	$2\frac{1}{4}$	$\frac{1}{2}$	$1\frac{1}{4}$
5-Tube.....	$5\frac{3}{8}$	$4\frac{3}{8}$	$2\frac{1}{4}$	$\frac{1}{2}$	$1\frac{1}{4}$
6-Tube.....	$6\frac{3}{16}$	$4\frac{3}{8}$	$2\frac{1}{4}$	$\frac{1}{2}$	$1\frac{1}{4}$
7-Tube Window..	7	$4\frac{3}{8}$	$2\frac{1}{4}$	$\frac{1}{2}$	$1\frac{1}{4}$

## No. 2 Direct Radiator Wrenches



Made in two sizes for  $1\frac{1}{2}$  and 2-inch nipples.

Size of Nipple.....inches	$1\frac{1}{2}$	2
Price, Wrench, 2 Feet Long.....each	\$2.00	\$2.25
Price, Wrench, 4 Feet Long.....each	3.00	3.75

## Nye Union Valve-Nipple Wrenches

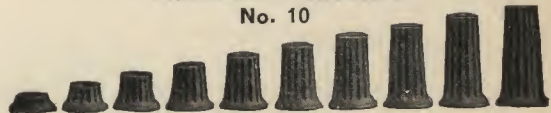


thus avoiding mashing them. Takes sizes  $\frac{3}{8}$  to 2-inch inclusive.

Price, Wrench.....each	\$1.50
Price, Ratchet Handle.....each	6.00

## Radiator Pedestals

## No. 10



Radiator pedestals are made in the following heights:  $\frac{1}{2}$ , 1,  $1\frac{1}{2}$ , 2,  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$ , 4,  $4\frac{1}{2}$  and 5 inches.

## Radiator Screw Nipples

## No. 5

With Right and Left Threads

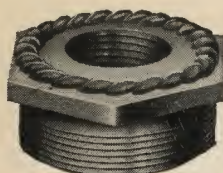


Heavy malleable radiator screw nipples with right and left threads.

Size.....in.	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Price.....each	\$ .15	.20	.20



### Cast Iron Radiator Bushings

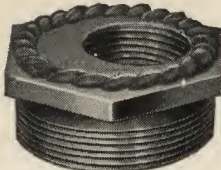


No. 336

Size Inches	Price Each	Size Inches	Price Each
1 1/4 x 1	\$.11	1 1/2 x 1 1/4	\$.14
1 1/2 x 1 1/2	.14	2 x 3/4	.21
1 1/2 x 3/4	.14	2 x 1	.21
1 1/2 x 1	.14	2 x 1 1/4	.21
.....	...	2 x 1 1/2	.21

### No. 35 Eccentric Bushings

Size Inches	Each	Size Inches	Each
1 1/4 x 1 1/2	\$.22	2 x 1/2	\$.27
1 1/4 x 3/4	.22	2 x 3/4	.27
1 1/2 x 1 1/2	.25	2 x 1	.27
1 1/2 x 3/4	.25	2 x 1 1/4	.27



Add 15% for right and left.

### No. 337 Cast Iron Radiator Plugs



Size.....inches	1 1/2	2
Price, No. 337.....each	\$.20	.20

### No. 5 Slotted Head Radiator Plugs



Size.....inches	1/8	1/4	3/8	1/2
No. 5.....each	\$.05	.08	.09	.25

### No. 10 Perfection Floor and Ceiling Plates

#### Cold Rolled Steel



Closed



Open

Size In.	EACH		Size In.	EACH		Size In.	EACH	
	Black	Nickel-Plated		Black	Nickel-Plated		Black	Nickel-Plated
1/4	\$.14	\$.25	1 1/4	\$.22	\$.35	3 1/2	\$.80	\$1.00
3/8	.15	.26	1 1/2	.25	.38	4	1.00	1.25
1/2	.16	.27	2	.30	.45	4 1/2	1.25	1.50
3/4	.17	.28	2 1/2	.50	.65	5	1.50	1.75
1	.20	.32	3	.65	.80	6	1.75	2.00

### No. 15 Perfection Solid Floor Plates

#### Sheet Steel or Brass

Used for floor plate only.

Has narrow flange for twin connection work.



Size Inches	Width Flange Inches	O. D. Flange Inches	PRICE, EACH		
			Black	Nickel-Plated	N.P. or Polished Brass
1/2	3/4	2 3/8	\$.08	\$.12	\$.17
3/4	3/4	2 1/2	.09	.13	.18
1	3/4	2 7/8	.10	.14	.20
1 1/4	3/4	3 1/4	.11	.15	.23
1 1/2	3/4	3 5/8	.12	.16	.25
2	3/4	3 7/8	.13	.17	.30

### Excelso Indirect Water Heaters



Single Coil Heater with Unions



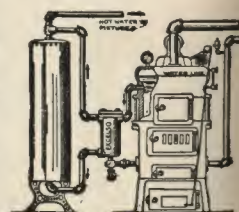
Top View of Double Coil Heater

Consists of a cast iron shell open at one end. This open end is covered with a plate on which is cast complete instructions for

taking heater apart. There are tapped openings for boiler connections and machined openings for coil.

Within this shell there is a heavy copper coil heating element. Coil is installed by means of the Excelso Ground Joint Connections, without packing. All parts are interchangeable. All brass and copper water travel.

When used with a steam or vapor boiler both shell openings are connected below water line. This allows boiling water from boiler to flow through shell, heating domestic water circulating through copper coil.



Typical Installation

#### Single Coil Equipped with Unions

No.	Each	Length Inches	Diam. In.	Width Inches	Shell Openings Inches	Coil Openings Inches	CAP. TANK, GALS.	
							Below Water Line	with Live Steam
Jr.	\$12.50	8 1/2	5	..	1	3/4	30	45
11	30.00	10 1/2	5	..	1	3/4	35	50
12	40.00	14	5	..	1	3/4	45	75
13	50.00	11 1/2	6 1/2	..	1 1/2	1	60	100
14	60.00	15	6 1/2	..	1 1/2	1	90	150
15	70.00	19 1/2	6 1/2	..	1 1/2	1	120	200
16	80.00	23 1/4	6 1/2	..	1 1/2	1	140	220
<b>Double Coil</b>								
25	120.00	12 1/2	9	..	2	1 1/2	160	250
26	150.00	15	9	..	2	1 1/2	200	300
27	180.00	19	9	..	2	1 1/2	300	450
28	210.00	24 1/2	9	..	2	1 1/2	400	600
<b>Triple Coil</b>								
35	\$310.00	21	13 3/4	..	3	2 1/2	600	900
36	400.00	25	13 3/4	..	3	2 1/2	800	1200
37	490.00	29	13 3/4	..	3	2 1/2	1000	1500
<b>Dual Coil</b>								
42	\$610.00	21 1/2	13 3/4	26	4	3	1200	1800
44	780.00	25 1/4	13 3/4	26	4	3	1600	2400
46	950.00	29 1/4	13 3/4	26	4	3	2000	3000

Temperature rise: †100° in 3 hours; ‡100° in 3 hours at 5 pounds pressure.

### Excelso Fin-Pin Water Heaters

An efficient hot water supply heater for down in the fire pot of warm air furnaces and hot water heating boilers.

The fins allow air passage around heater, thus avoiding deadened fire.

Well designed for quick circulation. Easy to install.

The heater has 4 tappings to meet all requirements.

Made in cast iron or brass.



No.	Capacity Gallons	Tappings Inches	PRICE, EACH	
			Iron	Brass
30	30	1	\$3.75	\$16.00
40	40	1	4.40	18.00



### No. 72 Detroit Radiator Valves

For Steam, with Union and Composition Disc

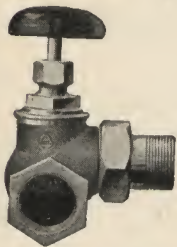


Has non-breakable, non-heat conducting round handle, with a permanent black hard-rubber finish. Body is in satin finish with nickel trimmings. All threads right hand.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2	\$3.70	1	\$5.10	1 1/2	\$8.40
3/4	4.30	1 1/4	6.40	2	13.60

### Corner Radiator Valves

With Union and Composition Disc For Steam



No. 32, Right Hand Corner



No. 37, Left Hand Corner

Rough body, nickel-plated all over.

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2
Price.....each	\$4.10	4.75	5.60	7.05	9.25	15.00

### No. 260 Globe Union Radiator Valves

Packed Type For Steam



This valve is regularly furnished for steam. If it is required for hot water system, order should so specify.

All threads right hand.

Rough body and polished trimmings, nickel-plated all over.

Size Inches	Price Each	Size Inches	Price Each
1/2	\$3.70	1 1/4	\$6.40
3/4	4.30	1 1/2	8.40
1	5.10	2	13.60

### No. 256 Union Radiator Gate Valves

Non Rising Stem—Packed Type

For Steam and Water



Radiator gate valve with union, double wedged disc and mushroom type non-heating handle. Made from high grade steam metal.

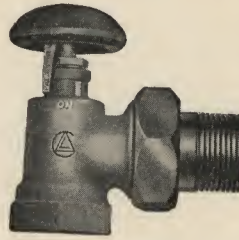
Rough body, plated all over.

Polished trimmings.

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/2	\$3.65	1	\$5.20	1 1/2	\$9.00
3/4	4.25	1 1/4	6.60	2	12.80

### No. 101 Detroit Radiator Valves

For Hot Water, Angle with Union, Quick Opening



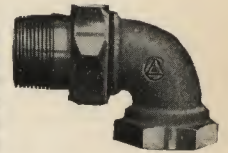
This valve works on the principle of a swinging plate. An elliptical plate, set at a 45-degree angle, is attached to the stem. By revolving the stem one-half turn to the left, the valve is opened, while one-half turn to the right closes it.

Attached to the underside of the handle is an indicator which makes it possible to see at a glance whether the valve is opened or closed.

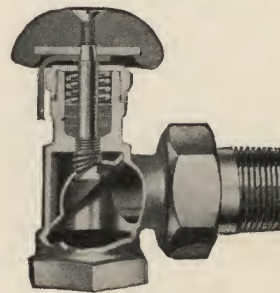
Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2	\$3.25	1	\$4.50	1 1/2	\$7.30
3/4	3.70	1 1/4	5.75	2	12.00

### No. 132 Union Radiator Elbows

Size Inches	Each
1/2	\$1.75
3/4	2.00
1	2.50
1 1/4	3.30
1 1/2	4.25
2	7.20



### Arco Packless Hot Water Valves

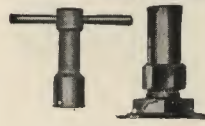


The equalizing features of this valve permit the area of the opening through the valve to be adjusted after installation to meet the requirements of each individual radiator. The adjustment is made by loosening the stem cap and turning the stop so that the valve can be opened only to the desired amount, for those radiators having too free a circulation.

With union, angle pattern, satin nickel finish, polished trimmings.

Size.....inches	1/2	3/4	1	1 1/4	1 1/2
Price, No. 901 Round Handle. ea.	\$3.25	\$3.70	\$4.50	\$5.75	\$7.30
Price, No. 904 Lever Handle. ea.	3.25	3.70	4.50	5.75	7.30

### Lock and Shield Radiator Valves



Size Valve Inches	Price Each N. P. Keys	Size Valve Inches	Price Each N. P. Keys
1/2	\$.50	1 1/4	\$.50
3/4	.50	1 1/2	.50
1	.50	2	.50

Lock and shield equipment can be furnished with any regular pattern of radiator valves at additional charge.

### Composition Valve Handles



Size Valve In.	Price, Each Handle Only	Size Valve In.	Price, Each Handle Only
1/2	\$3.30	1 1/4	\$3.35
3/4	.30	1 1/2	.45
1	.35	2	.45

### Wood Radiator Valve Wheels

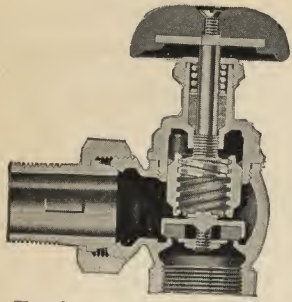


For valves, sizes 1/2, 3/4, 1, 1 1/4, 1 1/2 and 2 inches.

Price, Wood Wheels Only.....each	\$ .08
Price, with Plates and Screw.....each	.22



## Arco Packless Radiator Valves



These valves cannot leak. They are permanently tight against the passage of water, steam or even air.

The Leakproof feature is a special molded ring with metal core held under compression by spring.

The non-breaking composition handle will not work loose. One smooth turn opens or closes valve.

Has composition disc of highest quality.

For hot water a circulating hole is drilled, prefix A to stock number, all types.

## Angle

Size  
Inches  
1/2  
3/4  
1  
1 1/4  
1 1/2

Price  
Each  
No. 999  
Steam  
\$3.70  
4.30  
5.10  
6.40  
8.40

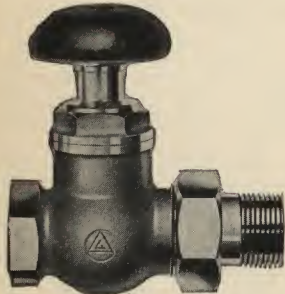


No. 999 Angle

## Globe

Size  
Inches  
1/2  
3/4  
1  
1 1/4  
1 1/2

Price  
Each  
No. 949  
Steam  
\$3.70  
4.30  
5.10  
6.40  
8.40

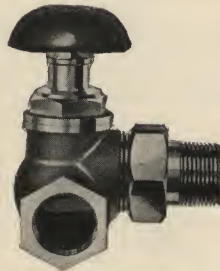


No. 949 Globe

## Corner

Size  
Inches  
1/2  
3/4  
1  
1 1/4  
1 1/2

Price Each	
No. 945 R. H. Corner	No. 941 L. H. Corner
\$4.10	\$4.10
4.75	4.75
5.60	5.60
7.05	7.05
9.25	9.25



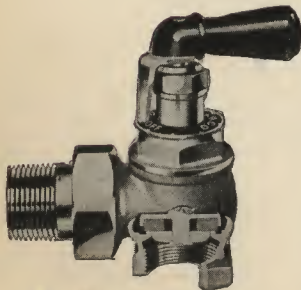
No. 945 Corner

## No. 994 Fractional

The fractional type Arco Packless Valve is the same as the steam type except with lever handle and dial equipment and the calibrating cone and disc.

The calibrating cone is shaped to give accurate control of vapor flow.

The maximum port opening can be permanently adjusted after installation. The stop fastened to the dial can be moved to the required position by loosening cap.



No. 994 Fractional

Size  
Inches  
1/2  
3/4

Price  
Each  
\$3.70  
4.30

Size  
Inches  
1  
1 1/4

Price  
Each  
\$5.10  
6.40

## Radiator Air Valves



No. 8951, with Wood Wheel

Nickel-plated, 1/8-inch size.  
Price, No. 8951.....each \$.70

No. 8952, with Loose Key

Nickel-plated, 1/8-inch size.  
Price, No. 8952 without Key...each \$.55



No. 8953 Key

For loose key valves.  
Price, No. 8953.....each \$.12



## Automatic Air Valves

No. 20

This Automatic Air Valve is designed for a competitive air valve that can be relied on to do its work in a satisfactory manner.

The expansion piece is made with all the care used in other compositions and is reliable in every respect.

Threaded for 1/8-inch pipe only.



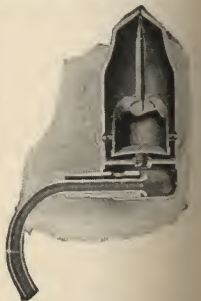
Price .....each \$1.00

## No. 500 Ideal Airid Siphon Valves

The valve operates thermostatically by the evaporation of a volatile liquid contained within the float forcing outward the diaphragm which forms the bottom of the float, raising the pin and instantly closing the valve. A slight cooling relieves the internal pressure and opens the valve.

Under flooded radiator conditions the valve vents without leak because the large separating chamber allows separation of the air and water. The seat requires no guide for the pin, thus eliminating the water pocket around the seat which causes sputtering and leaking. The drain area allows the valve to drain perfectly without a by-pass from the stem to the air space at the top of the shell.

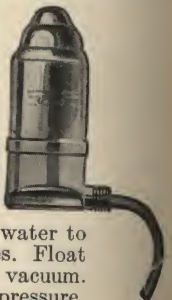
Price, No. 500.....each \$1.35



## No. 510 Ideal Vac-Airid Vacuum Valves

For venting low pressure steam radiators, self sealing against return of air. No seat plug or guide; reduces to a minimum the liability of clogging from dirt and insures dry operation by preventing capillary attraction from holding water in suspension around the opening. Large separating chamber; ample space for air and water to separate, insuring that only air will pass out the opening. Proper area between float and shell allows water to drain from the valve when siphon operates. Float contains volatile liquid sealed under vacuum. Steam temperature causes internal gas pressure, expanding diaphragm at bottom of float closing valve.

Price, No. 510, Angle Connection, 1/8-Inch.....each \$4.00  
Price, No. 512, Straight Shank, 1/8-Inch.....each 5.00





## In-Airid Invisible Air Valves



No. 1, for Steam

No. 2, for Vacuum

This air valve fits all new type radiation. It prevents short circuiting and assures complete venting of all the air, making all sections hot. It is entirely invisible, thereby improving the appearance of the radiator.

In-Airid is in the driest part of the radiator, yet, should water reach it the float closes instantly. No siphon is necessary because there is no shell to hold water. There is no hissing or leaking of steam or water.

It will not clog with dirt because it is in the cleanest part of the radiator, yet when necessary it can be easily cleaned if clogged under abnormal condition.

It cannot be damaged because all working parts are within the section.

It is all metal. Requires no adjustment and cannot be tampered with. It is easily installed.

The No. 2 In-Airid is for below atmosphere jobs. It permits the air to escape but prevents its return into the system.

It has a vacuum seal with hand-lapped monel disc and seat. This valve vents with only a slight boiler pressure. But as the steam goes down the air seal closes tightly, creating a partial vacuum in the system and retaining heat for hours after the fire is banked.

Price, No. 1.....each \$1.85  
Price, No. 2.....each 3.00

## Ideal Quick Vents



For venting mains, long runs of pipe, indirect stacks, drop risers, etc., where a large amount of air must be expelled quickly. Will benefit all low pressure steam jobs by venting entire piping system thereby heating radiators quicker under less pressure. Operates by volatile liquid contained within expandable member which has diaphragm at top and bottom giving full movement of stem. No adjustment. All metal. Very sensitive. Does not close against water. Venting port,  $\frac{3}{8}$ -inch diameter. Valve connection,  $\frac{3}{4}$  or  $\frac{1}{2}$ -inch pipe thread. Nickered finish.

Price, No. 815,  $\frac{3}{4}$ -Inch.....each \$3.00  
Price, No. 820,  $\frac{1}{2}$ -Inch.....each 3.00

## No. 816 Ideal Air Line Valves

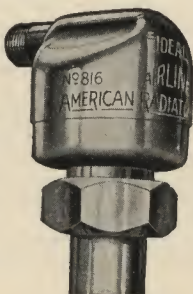
For venting steam radiators where drip line, air line or vacuum air line is used.

It is always open to the passage of air but closes tight when steam reaches it. Should water reach the valve, it remains open for passage of the water to the drip line. It insures a hot radiator but keeps the air line cold.

Non-adjustable—cannot be tampered with—made entirely of metal, sensitive in operation.

Nickel-plated— $\frac{1}{8}$ -inch radiator connection;  $\frac{1}{4}$ -inch female union on outlet.

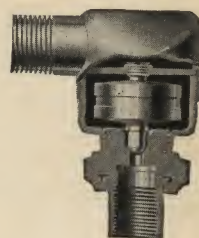
Price, No. 816.....each \$3.50



## No. 817 Ideal Vento Vents

For use on Vento Heaters and Blast Coils.

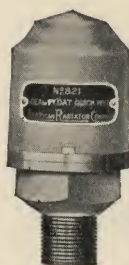
This valve is designed particularly for relieving air from Vento heaters, low pressure only. It has a large venting port— $\frac{3}{16}$ -inch diameter. Operates by volatile liquid contained within expandable member with diaphragm at top and bottom. No adjustment. All metal. Does not close against water.



Connection to heater,  $\frac{3}{8}$ -inch pipe size. Outlet fitted with  $\frac{1}{4}$ -inch female union for air line. Can be set in any position. Nickel-plated. Shipping weight each,  $\frac{1}{2}$  pound.

No. 817.....each \$4.00

## No. 821 Ideal Float Quick Vents



For free venting mains, indirect stacks, vento, coils, etc., or any steam piping where it is desirable to expel air quickly without developing back pressure. Closes against water.

The proper use of the Ideal Quick Vent on basement piping opens the entire system to the atmosphere until steam or vapor is generated and circulated to the valves. Air from the mains is vented into the basement and not into the rooms. Besides materially increasing the efficiency of the heating plant, this vent improves operation and control.

Closes automatically against steam or water. Heavy cast brass housing and base protect all working parts. Has corrugated, non-collapsible metal float, phosphor bronze diaphragms, and  $\frac{3}{4}$ -inch iron pipe thread. No. 821, Shipping Weight, 2 Pounds.....each \$6.00

## No. 822 Ideal Vac-Vents

Made especially for use with vac-airids on below atmosphere steam heating plants. It is for venting the piping system in the basement and to prevent the re-entry of air. A large venting port insures quick and even circulation. The large non-collapsible float closes against water. The air seal closes against the re-entry of air exactly the same as in the vac-airid. Only one vac-vent is necessary for each set of mains.

Hand-ground monel air seal snaps shut when air is eliminated from the main and no air can re-enter. Heavy cast brass housing and base protect working parts. Phosphor bronze diaphragms at both top and bottom of expandable member insure ample movement and extreme sensitiveness. No adjustments required at any time. Has  $\frac{3}{4}$ -inch iron pipe thread.

Price No. 822.....each \$9.00



## Jenkins Automatic Air Valves



Plain



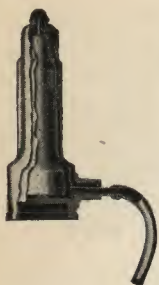
With Union

The function of the automatic air valve is to remove the entrained air from the heating system. This is of vital importance because the removal of the air permits the steam to completely fill all the heating coils or radiators, thus utilizing their entire capacity.

Price, Plain,  $\frac{1}{8}$  or  $\frac{1}{4}$ -inch.....per dozen \$7.50  
"  $\frac{1}{8}$  inch Inlet,  $\frac{1}{8}$ -inch Union....." 9.50  
"  $\frac{1}{8}$  "  $\frac{1}{4}$  " " " 10.00  
"  $\frac{1}{4}$  "  $\frac{1}{4}$  " " " 10.00



### No. 1 Hoffman Siphon Air Valves



This valve is designed for low pressure gravity systems of one and two pipe type. Through its use all air is vented from radiator without loss of steam, maximum heating efficiency is assured and leakage from water-logged radiators prevented. After contact of water with valve the siphon drains all water from the valve and venting occurs without the slightest spit even if the radiator is under pressure.

Maximum guaranteed operating pressure, 10 pounds.

Has  $\frac{1}{8}$ -inch radiator connection.

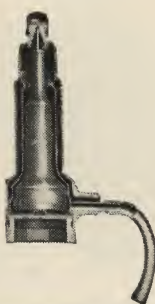
No. 1.....each \$1.90

### No. 2 Hoffman Syphon Air and Vacuum Valves

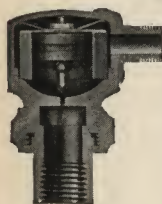
This valve is similar to the No. 1, but in addition, when the radiator is once freed from air, return of air through the vent port is prevented.

Normally air vent port is wide open until steam comes in contact with the heat sensitive fluid in the float, expanding the flexible diaphragm, raising the float and closing vent port. Air check prevents return of air until the vacuum formed in the valve permits atmospheric pressure, acting through chamber port to force diaphragm upward, raising the float and doubly closing the vent port.

With this valve an ordinary one-pipe steam system may be changed into vacuum type. Maximum guaranteed operating pressure, 10 pounds. Radiator connection,  $\frac{1}{8}$  inch. Price, No. 2.....each \$4.50



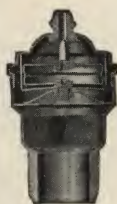
### Hoffman Air Valves



No. 3

No. 3 Air Line Valves are sensitive in action and close the instant steam fills the radiator. No adjustment is necessary either before or after installation.

Maximum guaranteed operating pressure, 10 pounds.  $\frac{1}{8}$ -inch radiator connection with  $\frac{1}{4}$ -inch air line connection.



No. 4

No. 4 Quick Vent Valves are for venting mains, risers, vent stacks, coils, etc., where water is not a factor. All air is vented through  $\frac{1}{8}$ -inch vent port. Valve does not close against water.

Maximum guaranteed operating pressure, 10 pounds.

Standard connection  $\frac{3}{4}$ -inch. Can be supplied with  $\frac{1}{4}$ -in.

Price, No. 3.....each \$2.50

Price, No. 4.....each 2.80

### Hoffman Quick Vent Air Valves



No. 5

The No. 5 is intended for venting mains, indirect stacks and for use under all conditions where water is a factor. It vents all air, closes tightly against steam and prevents escape of water through vent port. For 1 and 2-pipe gravity systems.

No. 6 is similar to No. 5 and in addition prevents intake of air through the valve port. For small vapor-vacuum systems.

These valves have maximum guaranteed operating pressure of 10 pounds for  $\frac{1}{16}$ -inch port; 3 pounds for  $\frac{3}{16}$ -inch vent port. Pipe connection,  $\frac{3}{8}$ -inch.



No. 6

No. 5.....each \$8.00

No. 6.....each 12.00

### No. 11 Hoffman Vapor Vacuum Valves

The No. 11 vapor vacuum valve is similar in operation to the No. 6 valve but of much greater capacity, having  $\frac{3}{4}$ -inch port.

It is widely used for venting the return mains of vapor-vacuum systems or where the return of air to the system after having been vented is not desirable.

Maximum guaranteed operating pressure, 15 pounds.

Has  $\frac{3}{4}$ -inch connection.



Price, No. 11.....each \$28.00

### No. 16 Hoffman Air and Vacuum Valves

Designed especially for application where there are several steam mains or dry returns requiring quick venting. It is used on one pipe gravity systems where Hoffman No. 2 Valves are used on the radiators.

This valve can be installed where the pipe lines are run too close to ceiling to accommodate the No. 6.

Made with the regular Hoffman Double Check against return of air to the system.

Height over all,  $3\frac{3}{8}$  inches

Can be used on steam pressure up to 10 pounds.

Size of port,  $\frac{1}{16}$  inch; connection,  $\frac{3}{4}$  inch.

Price, No. 16.....each \$6.00

### Nos. 8 and 9 Hoffman Return Line Valves

These valves or radiator traps relieve air and condensation from radiators in vapor or vacuum systems without steam loss. Installed on systems where steam is supplied through a reducing valve, proper trap operation is assured, should the reducing valve fail to function, because of their wide operating pressure range.

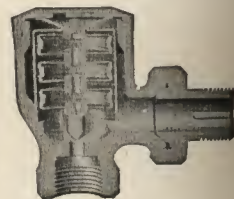
Maximum guaranteed operating pressure, 50 pounds.

No. 8 valve is furnished in angle, straightway and right and left-hand offset patterns. Capacity is 200 square feet of direct cast iron radiation.

No. 9 valve is made in angle and straightway patterns only. Capacity is 600 square feet of direct cast iron radiation.

Price, No. 8,  $\frac{1}{2}$ -Inch.....each \$6.00

Price, No. 9,  $\frac{3}{4}$ -Inch.....each 8.00



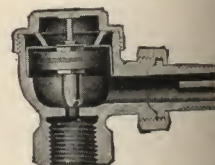
### No. 18 Hoffman Return Line Valves

This valve is similar in construction and basic principle to the No. 8 Hoffman Return Line Valve.

It is used where radiator units contain not over 100 square feet of direct cast iron radiation, and the pressure at the trap not in excess of 15 pounds. The thermostat consists of one chamber made by 2 diaphragms separated by a space ring to which they are fastened. In the center of the bottom diaphragm the valve pin is attached. The joint being expanded and soldered remains tight. The thermostat is held in its cage by a pin expanded and attached to the top diaphragm, this pin extending through the cage and engaging with the boss on the cap.

Made in  $\frac{1}{2}$ -inch size only in angle, straightway and right and left offset patterns.

Price, No. 18.....each \$4.50





### No. 7 Hoffman Adjustable Modulating Valves

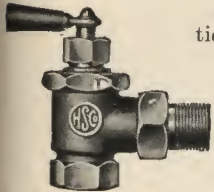


For use in vapor or vapor vacuum systems. Its chief feature is the easy and accurate setting of the valve port to fit radiators of various sizes. Is made in one size,  $\frac{3}{4}$  inch only, having a range of adjustment up to 200 square feet of radiation.

Adjustment is simple; loosen locknut; turn valve handle until proper number of graduations are visible on the dial plate; then tighten locknut. The valve handle may then be set to admit sufficient steam to heat a quarter, half, three quarters or entire radiator.

Regularly supplied with lever handle. It can be furnished with wood wheel, lock shield, closed top, without extra charge. Chain pull and extended stem at extra charge.  
No. 7, with  $\frac{3}{4}$ -inch Connections..... each \$6.00

### No. 19 Hoffman Quick Opening Radiator Supply Valves



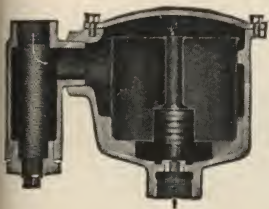
For vapor or vacuum pump installations where modulation is not required.

This valve is made in  $\frac{3}{4}$ -inch size, angle pattern only; suitable for radiators up to 200 square feet capacity. Is of the semi-packless type and attractive in appearance.

Full opening of the valve is obtained with less than one full turn of the valve handle and the valve can be opened or closed using only the pressure of one finger.

This valve is regularly supplied with lever handle, but can be furnished also with wood wheel handle, lock shield or closed top on special orders. Furnished with extended stem or chain pull at extra charge.  
Price, No. 19..... \$4.50

### No. 12 Hoffman Blast Traps



Especially adapted for draining condensation from indirect radiators, blast, Vento or Aero-fin stacks, unit heaters, ends of steam mains and risers, driers and drums, hot-water generators and laundry machinery where the operating pressure is not in excess of 30 pounds. This valve will take care of large amounts of condensation.

In functioning it distinguishes between steam, heated air and water of condensation, giving free discharge of air and condensation.

It relieves condensation immediately upon its arrival at the trap regardless of the water temperature. Combined with the float is a thermostatic member which overcomes the chief difficulty with float traps by automatically relieving air as well as condensation from the system.

The normal position of the valve is open and this is held until steam reaches it when closure takes place. If small quantities of condensation flow to the trap, the thermostat functions and relieves the water, but if larger amounts of condensation, beyond the capacity of the thermostat reach the trap, the float lifts the thermostat from its seat and maximum capacity is obtained.

#### Nominal Capacities

Pressure per Sq. In.						
.....lbs.	$\frac{1}{2}$	1	2	3	4	5
Capacity per Hr.						
.....lbs.	800	1000	1500	1800	2000	2500
*Capacity Radiation						
.....sq. ft.	3200	4000	6000	7200	8000	10000

\*Based on  $\frac{1}{4}$  pound condensation per hour per square foot. Maximum operating pressure, 30 pounds.  
Capacities for over 5 pounds pressure on application.  
Inlet connection, 1 inch; outlet, 1 inch.  
Prices upon application.

### Hoffman Controlled Heat Equipment

#### Differential Loops



A simple, efficient device, which prevents water from backing up in the return main and at the same time maintains a constant differential pressure between steam and return mains whenever the boiler pressure exceeds a predetermined amount.

Standard No. 0 and No. 02 loops are intended for systems where the low point in the dry return is not less than 24 inches above boiler water line. No. 03 and No. 04 loops require a minimum differential of 30 inches.

Loop No.	Radiation Sq. Ft.	Loop No.	Radiation Sq. Ft.
0	1 to 2000	03	3501 to 7500
02	2001 to 3500	04	7501 to 15000

Loops are sold as a part of controlled heat equipment. Prices on loops, or basement specialties, for use otherwise, are quoted on application; sold only when plan of installation is approved.

#### Radiator and Basement Specialties

Special attention is directed to the simple methods of figuring on vapor or vapor vacuum specialties.

It is only necessary to obtain data as to the number of radiators, the total amount of radiation and information as to whether steam mains or risers are dripped through return line valves. Then refer to the following table.

#### Radiator Specialties

Hoffman No. 7 adjustable modulating valve,  $\frac{3}{4}$ -inch capacity up to 200 square feet direct radiation.

Hoffman No. 8 return line valve,  $\frac{1}{2}$ -inch capacity up to 200 square feet direct radiation.

Price for Both Valves.....per radiator \$12.00

#### Basement Specialties

##### Class O

For installations up to 2000 square feet direct radiation, consisting of:

2 No. 18 Return Line Valves for Venting Steam Mains into Dry Return

1 No. 0 Hoffman Differential Loop, Including 1 No. 15 Vacuum Valve

1 No. 13 Hoffman Damper Regulator

1 No. 14A Hoffman Kompo Gauge

Price, Class O.....per set \$100.00

##### Class B

For installations of 2001 to 3500 square feet direct radiation, consisting of:

3 No. 18 Return Line Valves for Venting Steam Mains into Dry Return

1 No. 02 Hoffman Differential Loop, Including 1 No. 15 Vacuum Valve

1 No. 13 Hoffman Damper Regulator

1 No. 14A Hoffman Kompo Gauge

Price, Class B.....per set \$133.00

##### Class C

For installations of 3501 to 7500 square feet direct radiation, consisting of:

4 No. 18 Return Line Valves for Venting Steam Mains into Dry Return

1 No. 03 Hoffman Differential Loop, Including 1 No. 15 Hoffman Vacuum Valve

1 No. 13 Hoffman Damper Regulator

1 No. 14A Hoffman Kompo Gauge

Price, Class C.....per set \$165.00

##### Class D

For installations of 7501 to 15000 square feet direct radiation, consisting of:

6 No. 18 Return Line Valves for Venting Steam Mains into Dry Return

1 No. 04 Hoffman Differential Loop, Including 2 No. 15 Vacuum Valves

1 No. 13 Hoffman Damper Regulator

1 No. 14A Hoffman Kompo Gauge

Price, Class D.....per set \$242.00

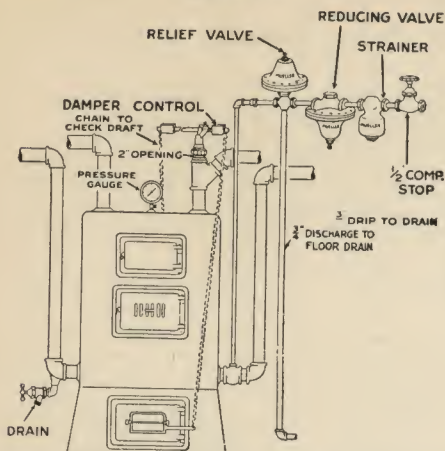
Where 50-foot risers or ends of 100-foot steam mains are dripped through return line valves, \$8.00 for each No. 9 valve. For longer risers or steam mains add \$30.00 for each No. 12 valve.

Where more than one boiler is used, add \$39.00 per boiler for additional specialties required.

Special or larger installations on application.



## Mueller Automatic Hot Water Heating Systems



The Mueller System of hot water heat control is shown installed on a house heating boiler.

It makes the home more livable. No unsightly tanks are used. It furnishes automatic supply, automatic relief and automatic damper regulation. "No air cushions" means that the relief valve operates often enough not to stick and when a small amount of water is discharged from the system at its highest pressure this water is automatically replaced through the reducing valve when the pressure drops back to the point at which this valve is set.

When the system is filled, the reducing valve closes as soon as the pressure reaches 10 pounds. This is enough to fill the radiators of the average 2-story residence. As the water is heated, the pressure increases in proportion to the temperature of the water in the system.

When the pressure reaches 25 pounds, the relief valve operates, allowing a small amount of water to pass from the system. Eventually, possibly hours after, the pressure will again reach its original 10 pounds, or the pressure necessary to open the reducing valve, at which time this valve opens and replaces the water which was released through the relief valve.

Authorities on heating admit that fresh water in a hot water heating plant promotes circulation. In the "Mueller System" just enough water is admitted daily to keep it fresh. The rate of circulation is also increased over that of the open tank due to the fact that a pressure of from 10 to 25 pounds is on the system at all times. The absence of a tank of any kind in the system saves labor and material as well as doing away with the possibility of freezing or rusting out of the tank.

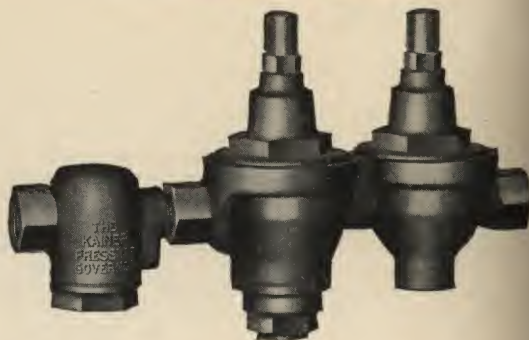
The stop cock in supply pipe should always be open and under no condition place a valve of any kind between the relief valve and the boiler. When filling system first close all air valves on the radiators and open supply cock and when the gauge shows 10 pounds begin to let the air out of the radiators. The reducing valve will automatically fill the system as the air is discharged through the air valves.

All vital working parts are made of carefully selected bronze metal. The valves are made with a phosphor bronze metal diaphragm and are extremely sensitive in operation. All valves are given severe tests both before and after they are assembled. Every care is exercised in their construction. They are protected by an efficient strainer that keeps pipe-scale and other foreign matter away from the valve seat. The pressure in the system operates on a diaphragm having 16 square inches of area—this means that they are the safest type known today.

Mueller Automatic Heat Control System complete includes relief valve, reducing pressure valve, strainer,  $\frac{1}{2}$  inch compression stop and check valve, pressure gauge and damper control regulator.

Complete with Damper Regulator.....each \$54.80  
As Described, without Damper Regulator.....each 36.80

## Kainer Pressure Governors For Hot Water Heating Systems



A safe, compact and accurate device for pressure reducing and relief service on a hot water heating system. Simplifies and reduces cost of a hot water layout by displacing a costly expansion tank and necessary fittings. It filters and controls the water supply and safeguards the heating system against excessive pressure due to expansion. The pressure reducing unit is designed to permit a full flow of water and quickly fills the system when first installed. Instant adjustment to meet a varied range of working pressures can be made by simply changing the position of the adjusting screws found underneath the bronze caps on top of the bonnets of both the pressure reducing and relief units.

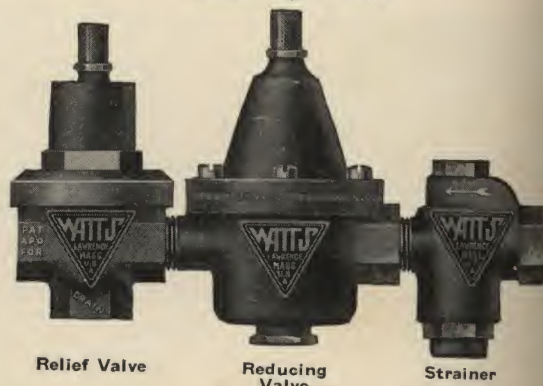
Constructed of cast or phosphor bronze and is rust, scale and trouble-proof. With little effort it can be instantly disassembled for inspection and reassembled quickly.

Tested at 60 pounds pressure and set at the factory to maintain 10 pounds on the system and to relieve the system when the pressure due to expansion reaches 30 pounds.

Dimensions over all: width, 10 inches; height,  $5\frac{1}{4}$  inches.

Price, Complete for Mounting.....each \$24.00

## Type 38 Watts Hot Water House Heating Units



This unit consists of a  $\frac{1}{2}$  inch strainer; a  $\frac{1}{2}$  inch pressure reducing valve, set and sealed 10-13 pounds; a  $\frac{1}{2}$  inch relief valve, set and sealed 25-30 pounds, A. S. M. E. Standard. Tested assembled at factory.

It makes a hot water heating system automatic. Eliminates the use of an expansion tank. Increases the speed of circulation, saves fuel. Has large, free waterways permitting quick filling of system. The strainer is easy to clean. The relief valve is approved by Underwriters' Laboratories, and by the National Board of Boiler and Pressure Vessel Inspectors as A. S. M. E. Standard.

The castings are made of bronze, springs of phosphor bronze, relief valve disc is a genuine Jenkins disc. Relief valve diaphragm is laminated, 1 ply of monel and 2 ply phosphor bronze. The reducing valve diaphragm is made of the finest rubber obtainable with a canvas insert.

Length,  $8\frac{1}{2}$  inches; height  $5\frac{1}{2}$  inches.

Packed in individual cartons, 6 valves to a case.

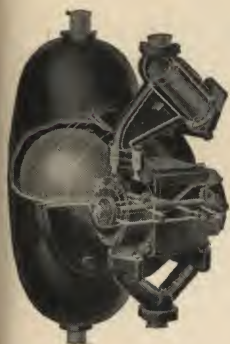
Weight 5 pounds.

Type 38.....each \$27.00



## McDonnell &amp; Miller Water Feeders

## No. 28 Self-Cleaning Duplex Feeder



If the boiler water line is kept in the proper place there can be no cracked sections or burned boiler. The No. 28 Self-Cleaning Duplex Feeder, illustrated opposite, does this in the simplest and most positive manner, feeding make-up water when the boiler water level tends to drop and draining off the surplus when it begins to rise. It does this automatically and dependably, forestalling the repairs that accompany burned boilers and guarding against flooding.

The No. 28 represents advanced standards of design and workmanship. Rotary valves are used for

both inlet and overflow. This type of valve works into a tighter and tighter fit, the longer the feeder is in service.

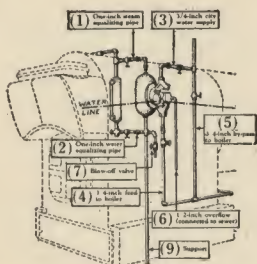
There are no sliding parts and, therefore, no possibility of sticking. A large strainer also contributes to the dependability of the feeder. Water level can be easily adjusted after the feeder has been installed; also differential between valve openings.

The capacity is sufficient to supply the feed water requirements of any size boiler, even if the condensation pump stops.

The No. 28 Feeder is adaptable to any boiler up to 20,000 feet capacity. Installation instructions accompany every feeder.

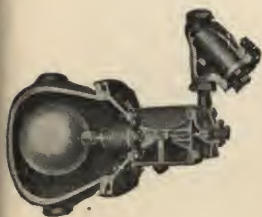
The shipping weight is 90 pounds.

No. 28.....each \$60.00



Typical Installation of No. 28 Feeder on Steel Boiler

## No. 30 Safety Feeder



No. 30 Safety Feeder prevents the water level from falling below the danger point, and is adaptable to the smallest as well as the medium sized boilers. The automatic features of the oil-burner and gas-burner installations encourage neglect of the boiler water line, making the safety feeder doubly essential in such installations.

A genuine Sylphon bellows serves the double purpose of a gasket and actuating medium, preventing leakage and eliminating friction.

The feed valve is isolated from the heat of the float chamber. Since there is no appreciable heat to precipitate scale, seizure and sticking of the feed valve is impossible, a feature that is essential in any safety device.

Installation instructions accompany every feeder.

- 1.—Steam equalizing pipe.
- 2.—Water equalizing pipe.
- 3.—City water supply.
- 4.—Direct feed to boiler.
- 5.—Blow-off.
- 6.—Tapped to boiler.



Typical Installation of No. 30 Feeder on Cast Iron Boiler

The shipping weight is 40 pounds.

No. 30.....each \$42.00

## Round Galvanized Expansion Tanks



Made of heavy steel, closely riveted. The shape of the head insures maximum safety against excessive pressure.

Heavily galvanized with highest grade zinc spelter both inside and out. Thoroughly tested before leaving factory.

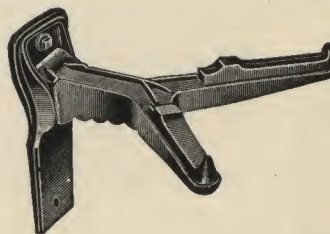
The water supply opening in the side is riveted in place of welding so it cannot be turned or broken out.

Spuds used are of drop forged steel and machined with a good clean thread.

Openings for gauge glass fittings are  $\frac{1}{2}$  inch and are  $13\frac{1}{2}$  inches from center to center. Can be differently spaced on special order.

Approx. Capacity Gallons	Size Inches	Square Feet of Radiation	PRICE, EACH	
			Without Trimmings	With Trimmings
10	12x20	300	\$8.00	\$11.00
15	12x30	500	9.00	12.00
20	14x30	700	12.50	15.50
26	16x30	950	14.00	17.00
32	16x36	1300	15.00	18.00
42	16x48	2000	16.50	19.50

## No. 497 Expansion Tank Brackets



Takes in all sizes of tanks from 10 to 16 inches diameter. Labor-saving—can be erected in two minutes. A substitute for the old-fashioned shelf and at less expense. Weighs about  $6\frac{1}{2}$  pounds and is shipped with screws packed under the slide pieces.

Price, No. 497.....each \$1.75

## American Hot Water Thermometers



Straight Type 278



Angle Type 280

Price, Straight.....each \$1.75  
Price, Angle.....each 2.00



**No. 906 Radiator Shields**

Can be fitted to any make of radiator, as the brackets can be shifted for varying constructions. Does not interfere with the operation of the radiator valves.

Trimmings furnished: 2 cast iron top brackets, 2 adjustable hangers, with threaded rod, knob and cast plates, 4 loops, and bolts.

Bottom loops on shield keep shield proper distance from the radiator. No hangers are furnished for bottom loops. No. 26 gauge material regularly furnished. Shield sets 7 inches off the floor.

**Regular Pattern—For Radiators 5 Sections or Less**

Height Radiator Inches	PRICE, EACH					
	Black	Galv.	Brass with Galv. Backs	All Brass	Black Painted or Bronzed	Galv. Painted or Bronzed
26	\$6.00	\$7.20	\$34.00	\$36.00	\$8.00	\$9.20
32 and 38	6.40	7.60	34.80	38.00	8.40	9.60
44	6.80	8.00	35.20	39.20	8.80	10.00

**For Radiators Over 5 Sections**

Add for Each Additional Section.

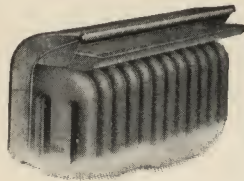
\$ .20	.24	.60	1.20	.60	.64
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Add \$6.00 to above prices for Black or Galvanized Vapor Pan.

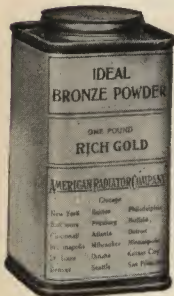
Add \$12.00 to list for Brass Vapor Pan.

In ordering indicate — (1) whether single, 2, 3, 4 column or window radiation; (2) name and height of radiator; (3) number and length of sections.

Additional net charge for crating.



Vapor Pan Withdrawn

**Bronze Powder**

One pound of bronze powder (except aluminum) covers about 300 square feet of radiation; 1 pound of aluminum powder covers about 600 square feet of radiation.

Size of Can . . . . .	pounds	1/2	1
Price of Gold Bronze . . . . .	per can	\$2.90	
" " Copper " . . . . .	"	2.90	
" " Aluminum Bronze . . . . .	per can	\$1.40	2.50

Other colors in one-pound cans.

**Bronzing Liquid**

One quart of bronzing liquid is required for each pound of bronze powder, except aluminum, which requires about 1 gallon of liquid to 1 pound of powder.

Size of Can . . . . .	gallons	1/2	1
Price . . . . .	per can	\$1.80	3.40

**No. 647 Black Asphaltum Varnish**

For painting boilers and risers. Put up in gallon and 1/2-gallon cans and in barrels of 30 gallons.

Price, Gallon Cans . . . . .	per can	\$2.70
" 1/2-gallon Cans . . . . .	"	1.40

**No. 800 Arco Water Regulators**

A damper regulator designed for hot water boilers which will control the drafts so as to maintain a constant water temperature at any degree between 100 and 220 degrees Fahrenheit.

The Arco Water Regulator is made entirely of metal. Within the bulb is an expandable metallic bellows, surrounding which is volatile liquid. As

the water temperature in the system increases, the liquid vaporizes and the gas pressure generated thereby compresses the bellows and forces upward the thrust rod or stem which tilts the lever and closes the drafts. As the water cools the gas pressure is relieved and the counterweight opens the drafts. There are no perishable parts to wear out. The action is sensitive and accurate. Adjustment for temperature is obtained by changing the position of weights on the lever.

Connections, 2-inch iron pipe thread.

Price, No. 800 . . . . . each \$18.00

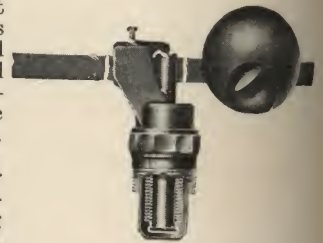
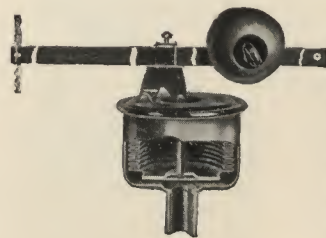
**No. 801 Arco Junior Water Regulators**

This regulator is designed especially for hot water supply boilers. As the dampers are small and light, less power is required to operate them. The construction and operation are similar to that of the No. 800 Arco Water Regulator.

The Arco Junior Water Regulator prevents boiling, sputtering steaming water at the faucets and insures plenty of hot water as long as there is sufficient fire in the heater.

Connection, 1 1/2-inch standard pipe thread. Temperature range, 130 to 180 degrees Fahrenheit.

Price, No. 801 . . . . . each \$16.00

**No. 905 Arco Steam Regulators**

An all-metal pressure regulator for controlling dampers on steam-heating boilers. It is sensitive and accurate. The diaphragm is a metallic bellows. The regulator contains no rubber or other perishable material, thus saving the annoyance and expense of renewals so common with regulators using a rubber diaphragm. The design is

such that the steam pressure is on the outside of the bellows, with the stem or thrust rod extending down within the bellows where it is attached to the head at the bottom. These two prime features insure that the bellows expands or contracts evenly in all folds. There is no tendency for the bellows to tilt, and thus unduly stretch the metal on one side. The head is formed as an integral part of the bellows thereby eliminating possibilities of leak at a soldered joint.

For pressures up to 15 pounds. Connection, 1-inch male thread.

Trimmings furnished: 36-inch lever, 4 pound weight, 12 feet of chain, 2 ceiling pulleys, 4 S hooks.

Shipping weight, 16 pounds.

No. 905 . . . . . each \$15.00



**Hoffman Vapor Damper Regulators**

Has compensating or balancing plate, and is practically frictionless; it is sensitive and operates on slight changes in pressure. It is automatic in operation and after it has once been set at the desired pressure requires no attention. It controls the dampers, and responds immediately, accelerating or retarding the fire to meet the change in demand for steam. It will fit any type boiler. Equipped with lever, weights, chain and pulleys.

Price.....each \$30.00

**No. 845 Mercoid Thermostats**

PATENT PENDING

For temperature control in refrigeration, on oil burners, unit heaters, etc.

The Mercoid Thermostat is for use where it is desired to start or stop an electric motor according to air temperature changes. Current is thrown on or off direct to motor. No relay or other remote control is necessary where motor load is below tube rating. Has many applications such as oil burning apparatus, refrigeration work, control of motors, pumps, fans, etc. Operates by the expansion of a volatile gas contained within a flexible metal bellows. When temperature advances, the bellows expands, tilting the Mercoid, a sealed glass tube containing inert gas and mercury.

When tube is tilted mercury flows to one end making contact within tube. Tilting movement positive

and quick acting. Gives accurate and close regulation. No open arc. No corrosion or oxidation of contacts. A positive safeguard against fire or explosion. Tests show the tube perfect after hundreds of thousands of operations. Rating: 10 amperes at 110 volts or 5 amperes at 200 volts, either d.c. or a.c. Can be furnished for any 25° range from 25° to 260° F. Operates accurately at any set point. Also furnished with flexible tube for remote control of the temperature of liquids.

Complete data furnished on request, giving full details covering conditions of use.

	For Heating	For Refrigeration
Price, Single Circuit, Single-Pole.....	\$30.00	\$33.00
Price, 2-Circuit or Double-Pole.....	36.00	39.00

**Arco Health Humidifiers**

This humidifier supplies the much needed humidity for homes, offices and other rooms artificially warmed.

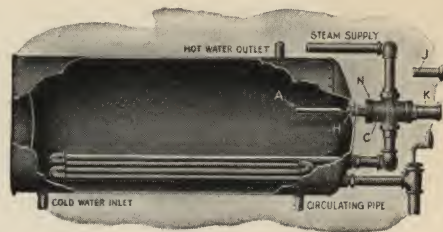
A few drops of perfume in the water can be used to quickly dispel cooking odors. Deodorants and medicated vapors are similarly diffused.

May be connected to any light socket or base plug.

Automatic safety cut-off switch shuts off current in event the humidifier runs dry.

Packed in a box with gravity re-set safety cut-out, cord with hand switch and a bottle of Arco Health Extract.

Price, Complete.....each \$15.50

**Arco Tank Regulators**

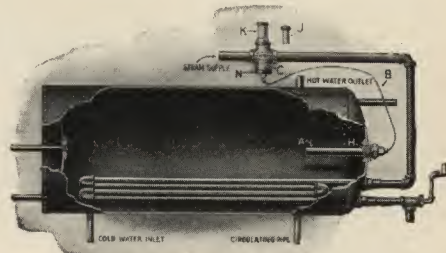
Direct Connected Type

For automatic regulation of the temperature of water or other liquids heated by steam. For steam pressure up to 15 pounds.

For use in hotels, schools, office buildings, hospitals, apartment buildings, factories, public institutions.

Employs a single seated valve, which eliminates the leak through the valve so common with double seated valves. It also allows the regulator to be placed in any position. It is sensitive, accurate and positive in operation. The valve has no stuffing box and cannot leak steam around the stem. It will not bind in operation, hence insures close regulation.

No moving parts are exposed, but are encased in a cast iron housing, finished in baked enamel. Interior parts are of brass with renewable seat and disc of phosphor bronze. The bellows used in this construction is made from one piece of brass—not from built-up discs.



Flexible Tube Type

Both the flexible tube type and the direct connected type operate on the same principle. Operating power is developed by the expansion of gas. Gas is readily responsive to temperature changes, hence quick operation and close regulation. An increase in temperature of the water surrounding the bulb A increases the internal gas pressure in the bellows chamber which forces up the head of the bellows and the valve stem, closing the valve. A slight cooling of the water causes a lessening of the gas pressure which allows the compression spring to open the valve. Adjustment for temperature is made by means of a key temperature. This feature prevents meddlers from tampering with the adjustment.

Temperature range regularly furnished 140° to 180° F. Special temperature range supplied on special order. Both types for use on steam pressure up to 15 pounds.

All sizes have iron body—brass interiors with bronze disc and seat. Sizes A and B have unions, both ends. Sizes C and D have screwed ends. Flexible tube on No. 826 is regularly furnished 8 feet long. Regulators with longer tubes can be supplied on special order.

Furnished complete with adjusting key and bushings. Full directions for installation with each regulator.

No.	Each	For Pipe Inches	Type	Shp. Wt. Lbs.
825A	\$50.00	1/2, 3/4, 1	Direct Connected with Unions	20
825B	60.00	1 1/4, 1 1/2	Direct Connected with Unions	25
826A	60.00	1/2, 3/4, 1	Flexible Tube with Unions	20
826B	70.00	1 1/4, 1 1/2	Flexible Tube with Unions	25
826C	80.00	2	Flexible Tube Screwed Ends	50
826D	90.00	2 1/2, 3	Flexible Tube Screwed Ends	60



## Jewell Automatic Temperature Regulators



Type J-8  
8-Day  
Clock  
Thermostat

Model J-8 is an 8-day thermostat with a jeweled balance clock. This thermostat maintains a uniform temperature, also automatically lowers the temperature at night and raises it in the morning.

Necessary only to wind it once a week.

Model J-0 is like Model J-8 except that it has no clock. An indicator at the bottom of the instrument is set by hand for the temperature desired as shown on the scale.

To lower the temperature the indicator is moved a certain number of degrees to the left. It must be moved back to the day-time setting in the morning. There is no automatic timing feature for temperature changes.

The motor is mounted on the basement wall. On a coal-fired system, when both room thermostat and limiting device call for heat, it opens the lower draft and closes the check damper by means of chains.

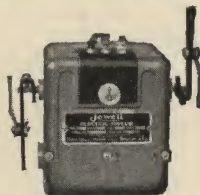
When either the room thermostat or limit control calls for less heat, the draft is closed and the check opened.

The J-E motor is finished in Chinese red. Takes alternating current at line voltage and automatically reduces it for the thermostat circuit. One part, the Rotor, replaces the armature, commutator, brushes, brush holders, brush holder springs, and brush holder bearing, eliminating all those sources of trouble. Has aluminum die cast case with integral mounting brackets. Duralumin timing gears. Equipped with basement switch.

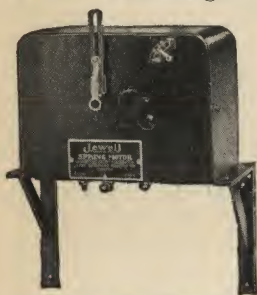
The model J-E-S is similar to Model J-E with the addition of a 110-volt built-in switch for controlling blower fan used for warm air furnaces and circulating pumps for hot water systems, allowing operation only while the room thermostat is calling for heat.



Type J-0  
Plain  
Thermostat



Type J-E Electric  
Motor



Type J-S Spring Motor

Model J-S, a spring motor, provides an efficient, dependable unit where electric current is not available. Operates from 1 to 2 weeks on one winding.

Tripped by current from 2 ordinary dry cells or transformer. Has basement switch to open up while coaling. Automatic cut-out leaves drafts closed if motor runs down.

## Jewell Junior Automatic Temperature Regulators



Clock  
Thermostat

There has been no sacrifice of quality in producing the Jewell Junior Regulator. Certain refinements which give extreme conveniences provided by the more expensive models have been omitted.

Two dry cells will supply all the current needed to operate the Jewell Junior. Thus homes not electrically wired, as well as wired homes can use this regulator. A special transformer should be used in connecting to house lighting current.

Accuracy in operation that is unapproachable by high-voltage thermostats is an advantage of low-voltage thermostats.

This thermostat maintains any desired temperature from 55 to 70 degrees all night and automatically brings the temperature back to the day setting at the desired certain hour in the morning. Clock control makes it unnecessary to make early morning trips to the basement. The clock and alarm must be wound each evening. Winding the alarm automatically moves the indicator to the fuel-saving night temperature setting.

## Jewell Junior Motor

This is a gravity motor.

Two seconds to lift the red weight, while one is in the basement tending the furnace is all the attention it needs.

The Jewell Junior Regulator comprises thermostat and motor, complete with all fittings to install, except transformer or batteries.



Motor

Junior Regulator, Complete...each \$23.95

## New Ideal Hotcoil Automatic Storage Heaters

## Gas-Burning

The features of this heater are as follows:

Bunsen type gas burner with self pilot.

Large bore heavy gauge, one-piece copper coil heating element, insuring immediate hot water recovery.

Conveniently located brass drain cock. Special brass hot water flow-fitting.

Non-syphon acting cold water intake, with outflow over thermostat, insuring instantaneous automatic action.

Central water-surrounded flue containing copper coil heating element.

New Arco metallic bellows, quick-acting automatic regulator.

Body of tank is heavy steel, galvanized inside and outside.

External metal jacket is finished in pearl gray with green porcelain enamel top and base.

Burns natural, manufactured or mixed gas, proper burner being supplied according to requirements.

Gas connection,  $\frac{3}{8}$  inch. Cold water inlet,  $\frac{3}{4}$  inch. Hot water outlet,  $\frac{3}{4}$  inch. Flue connection, 3 inches.

Diameter of heater, 18 inches.

No.	G-20	G-30	G-40
Nominal Capacity.....	gallons 20	30	40
Height Over All.....	inches 49	60	71½
Shipping Weight.....	pounds 200	250	300
Heaters.....	each \$60.00	75.00	90.00



Model No.	Description	Wt. Lbs.	Each
J8-JE 8-Day Clock, Thermostat, Electric Motor		14	\$120.00
J8-JES 8-Day Clock, Thermostat, Electric Motor with built-in Switch.....		14	126.00
J8-JS 8-Day Clock, Thermostat, Spring Motor		19	96.00
J0-JE Plain Thermostat, Electric Motor.....		12	86.00
J0-JES Plain Thermostat, Electric Motor with built-in Switch.....		12	92.00

For a JE motor to operate on any current other than 110-volt, 60-cycle a.c. add \$2.50 to the net price. This applies to 110 or 220-volt, 25, 30, 40 or 50-cycle a.c.

Separate Units  
Thermostats

No. J0, Plain Thermostat, Weight 2 pounds....	each \$26.00
No. J8, 8-Day Clock Thermostat, Weight 5 pounds.....	each 60.00

## Motors

No. JS, Spring Motor, Weight 16 pounds.....	each \$36.00
No. JE, Electric, 110-V. 60 Cy. A.C. Wt. 8 lbs. ....	each 60.00
No. JES, Electric 110-V, 60-Cy. A.C. with built-in Switch, Weight 12 pounds.....	each 66.00



## Aurora Steel Hot Water Storage Tanks



Used horizontally or vertically. Made with coils, manholes, etc., if specially ordered. If special tappings are desired give sketch showing size and location of openings. A manhole is recommended with tanks containing steam coils.

The illustration shows a standard horizontal water storage tank equipped with a regular 4-pipe return bend steam coil.

When vertical storage tanks are equipped with a steam coil, a spiral coil made in one piece without any fittings is recommended, in order to get proper circulation of steam and return of condensation.

Tanks equipped with steam coils should be provided with a manhole.

## Standard Storage Tanks

Tested to 100 pounds hydrostatic pressure; for working pressures not exceeding 65 pounds to the square inch.

Tanks 20 and 24 inches in diameter have 1½-inch openings. Others have 2-inch openings.

Cap. Gals.	Diam. In.	Lgth. Ft.	Wt. Lbs.	Price Each	Cap. Gals.	Diam. In.	Lgth. Ft.	Wt. Lbs.	Price Each
66	20	4	270	\$94.00	315	36	6	700	\$206.00
85	20	5	310	104.00	365	36	7	780	241.00
100	24	4	330	109.00	420	36	8	870	256.00
120	24	5	380	123.00	525	36	10	1030	293.00
140	24	6	430	134.00	430	42	6	890	276.00
150	30	4	430	143.00	500	42	7	980	310.00
180	30	5	500	158.00	575	42	8	1070	333.00
220	30	6	560	173.00	720	42	10	1250	375.00
250	30	7	630	196.00	865	42	12	1430	415.00
295	30	8	700	211.00	1000	42	14	1620	468.00

## Extra Heavy Storage Tanks

Tested to 150 pounds hydrostatic pressure; for working pressures not exceeding 100 pounds to the square inch.

Tanks 24 inches in diameter have 1½-inch openings. 30, 36 and 42-inch tanks have 2-inch openings while 48-inch tanks have 3-inch openings.

Cap. Gals.	Diam. In.	Lgth. Ft.	Wt. Lbs.	Price Each	Cap. Gals.	Diam. In.	Lgth. Ft.	Wt. Lbs.	Price Each
120	24	5	390	\$137.00	500	42	7	1260	\$390.00
140	24	6	440	155.00	575	42	8	1400	420.00
180	30	5	520	182.00	720	42	10	1660	480.00
220	30	6	590	198.00	865	42	12	1910	540.00
250	30	7	660	224.00	1000	42	14	2180	614.00
295	30	8	720	242.00	750	48	8	1690	510.00
315	36	6	920	264.00	940	48	10	1960	580.00
365	36	7	1030	300.00	1130	48	12	2250	650.00
420	36	8	1160	328.00	1300	48	14	2570	715.00
525	36	10	1380	385.00	1500	48	16	2860	800.00
430	42	6	1140	345.00	1700	48	18	3150	870.00

Tanks furnished riveted or welded at same list.

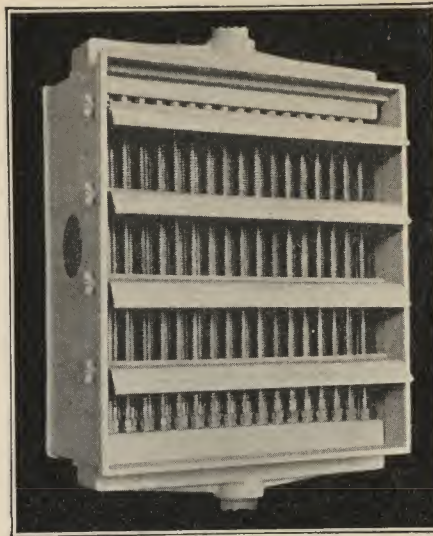
## Tanks with Horizontal Steam Coil

PRICE, EACH					PRICE, EACH				
Diam. Tank In.	Lgth. Tank Ft.	Size Pipe In.	Plain Coil	Galvanized Coil	Diam. Tank In.	Lgth. Tank Ft.	Size Pipe In.	Plain Coil	Galvanized Coil
20	4	1	\$29.00	\$35.00	36	6	1½	\$51.00	\$62.00
20	5	1	30.50	38.50	36	7	1½	54.00	66.00
24	4	1¼	35.50	42.00	36	8	1½	57.50	70.00
24	5	1¼	37.00	45.00	36	10	1½	64.00	78.00
24	6	1¼	38.50	48.00	42	6	1½	51.00	62.00
30	4	1¼	35.50	42.00	42	7	1½	54.50	66.00
30	5	1¼	37.00	45.00	42	8	1½	57.50	70.00
30	6	1¼	38.50	48.00	42	10	1½	64.00	78.00
30	7	1¼	40.00	51.00	42	12	1½	70.50	85.00
30	8	1¼	41.50	54.00	42	14	1½	77.00	93.00

Flanged opening add \$8.00 to list for 2 or 2½-inch opening, \$9.00 for 3 or 3½-inch opening, \$10.00 for 4-inch opening, \$15.00 for 5-inch opening, \$18.00 for 6-inch opening.

Manhole in head \$30.00; in shell, \$45.00. Handhole in head or shell, \$8.00.

Galvanizing, 5 cents per pound extra.

Dixie Unit Heaters  
Model No. 800

No. 800, Front View

is forced directly to the floor. This constantly recirculating flow of air soon reaches all parts of the room.

Headers are cast in one piece into which seamless copper tubes are individually connected, both top and bottom, without the use of solder or brazing. The core is 3 inches

thick and consists of 4 rows of tubes, being so arranged that no air passes through core without being thoroughly heated.

Cores are tested to 200 pounds hydrostatic pressure. For higher pressures, a core with other headers to operate on 200 pounds steam pressure is manufactured.

Ratings on heaters will be supplied

upon advice of steam pressures. Furnished with 5 pounds steam pressure this heater will produce approximately 218250 B.T.U. at 50 degrees room temperature.

Weight, 140 pounds.

Prices and further information upon application.

Air Entering Heater	Air Leaving Heater	B.T.U. per Hour	Condensate per Hour	Equivalent Square Feet Direct Radiation	Cubic Feet Air per Minute	Shipping Weight Pounds
40	130	232620	242	960	2400	230
50	136	218250	227	908	2400	230
60	141	205340	214	856	2400	230
65	143	200500	208	832	2400	230
70	144	193510	202	808	2400	230

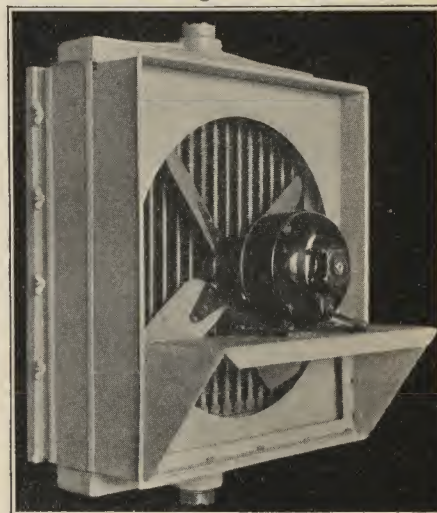
The above ratings are based on 5 pounds of steam pressure. Ratings on other steam pressures furnished.

Prices upon application.

Other models are also manufactured having a range of capacities from 100 square feet equivalent radiation to 1700 square feet.

Quotations gladly made upon application.

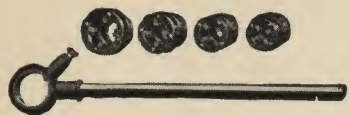
The Commercial Model heater is supported directly from the supply line. Can be suspended 10 or 12 feet above floor in restricted places, out of the way of machinery or work men. The warm air stream is at any time easily adjusted in any direction, sideways or vertically and from this height as much as 2600 cubic feet of air per minute



No. 800, Rear View



### No. 11 Toledo Ratchet Pipe Threading Devices



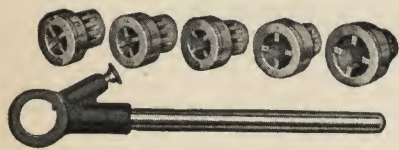
Threads  $\frac{1}{2}$  to  $1\frac{1}{4}$ -inch pipe.

This tool is light and compact and reaches the most difficult corner job.

Die heads are instantly changed from one size to another by pulling the ratchet pawl knob. Die segments can be removed when dull and easily reground. Complete tool consists of ratchet handle,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 and  $1\frac{1}{4}$ -inch r.h. die heads with dies, all packed in a strong carton. If complete tool is not desired any combination of die heads may be ordered.

Price, No. 11, Ship. Wt. 12 Lbs.....	each	\$24.00
Price, Ratchet Only.....	each	4.00
Price, $\frac{1}{2}$ , $\frac{3}{4}$ , 1 or $1\frac{1}{4}$ -Inch Die Head with Dies.....	each	5.00
Price, $\frac{1}{2}$ or $\frac{3}{4}$ -Inch Dies Only, per Set of 4 Segments.....		2.50
Price, 1 or $1\frac{1}{4}$ -Inch Dies Only, per Set of 4 Segments.....		2.50

### No. 00 Toledo Ratchet Pipe Threading Devices



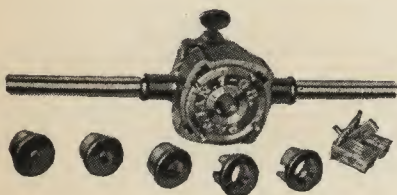
Threads  $\frac{1}{8}$  to  $\frac{3}{4}$ -inch pipe.

Die heads are instantly changed from one size to another by pulling ratchet pawl knob and allowing one

head to drop out and another in. Complete tool consists of ratchet handle and  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch die heads complete with r.h. dies, all packed in a strong carton.

Price, No. 00, Ship. Wt. 10 Lbs.....	each	\$19.00
Price, Ratchet Only.....	each	3.00
Price, $\frac{1}{8}$ , $\frac{1}{4}$ , or $\frac{3}{8}$ -Inch Die Head with Dies.....	each	3.00
Price, $\frac{1}{2}$ or $\frac{3}{4}$ -Inch Die Head with Dies.....	each	3.50
Price, Dies, per Set of 4 Segments.....		2.00

### No. 0 Toledo Adjustable Pipe Threading Devices



Threads  $\frac{1}{2}$  and  $\frac{3}{4}$ -inch with one set of dies;  $\frac{1}{4}$  and  $\frac{3}{8}$ -inch threads with another set, and  $\frac{1}{8}$ -inch threads with another set. Uses the receding-die principle for threading  $\frac{1}{2}$  and

$\frac{3}{4}$ -inch pipe, making it an easy operating tool.

Light and compact, being only 24 inches long from tip to tip of the handles.

No. of Sets of Dies to Stock.....	3
No. 0, Complete.....	each \$16.00
Dies per Set of Four Segments.....	2.50

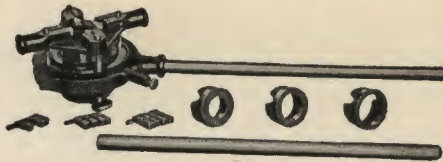
### No. 1 Toledo Adjustable Pipe Threading Devices

Threads 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2-inch pipe. With this device one man can easily cut 2-inch threads. The No. 1 has a minimum of working parts and is exceedingly strong and durable. It is made both as a right-hand and a left-hand tool—neither will do both.

Right-hand is furnished unless otherwise specified. Left-hand is slightly higher in price.

No. of Sets of Dies to Stock.....	4
Price, No. 1, Complete.....	each \$24.00
Price, Dies, per Set of Four Segments.....	2.50

### No. 1A Toledo Adjustable Ratchet Pipe Threading Devices

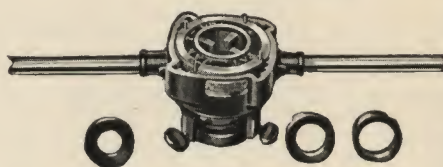


Threads 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , and 2-inch pipe; equipped with a ratchet. The No. 1A may be used with two handles as an ordinary case. It is desirable for threading pipe down a trench, or against walls, between rafters, etc.

Right-hand is furnished unless otherwise specified.

No. of Sets of Dies to Stock.....	4
Price, No. 1A, Complete.....	each \$30.00
" Dies, per Set of Four Segments.....	2.50

### No. 10 Toledo Adjustable Pipe Threading Devices



No. 10 threads the entire range of sizes from 1 to 2 inches with one set of dies.

This tool is adjustable for cutting over or under size threads as well

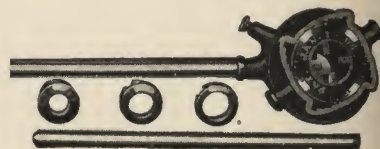
as standard. Furnished complete with right-hand dies.

Left-hand dies can be used in this tool and can be furnished on special order. It requires, however, a separate set of left-hand dies for each size pipe. Shipping weight, 25 pounds.

No. of Sets of Dies to Stock.....	1
Price, No. 10, Complete.....	each \$28.00
Price, Dies, per Set of 4 Segments.....	2.75

### No. 10A Toledo Adjustable Ratchet Pipe Threading Devices

This tool threads the entire range of sizes from 1 to 2 inches with one set of dies and also has a ratchet attachment, making it desirable for use in restricted places.



Left-hand dies can be used and can be furnished on special order. It requires, however, a separate set of left-hand dies for each size pipe.

No.	Threads Pipe Inches	No. of Sets of Dies to Stock	Price Complete Each	Price, Die per Set of 4 Segments
10A	1 to 2	1	\$34.00	\$2.75

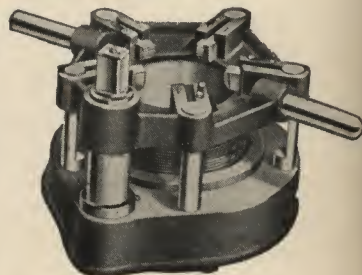
### No. 2 Toledo Geared Adjustable Pipe Threading Devices

Threads  $2\frac{1}{2}$  to 4-inch pipe. This tool is light, compact and easy to operate.

It takes only a few minutes to cut a thread with it, and it can be put on a pipe in most any place or position.

It is furnished complete with dies and ratchet.

No. of Sets of Dies to Stock.....	4
Price, No. 2, Complete.....	each \$100.00
Price, Dies, per Set of Five Segments.....	8.00





## Toledo Standard Power Drives



This is a mechanism designed to operate Toledo hand pipe threading and cutting tools and similar devices by electricity. It is about 6 feet long and mounted on wheels 18 inches in diameter. Equipment is portable and easily moved around. Motor on power drive is started and stopped by a switch mounted on the shaft housing, and the power is transmitted to the driving head through a 2-speed transmission gearing controlled by a knob handle projecting through the fuse box. On slow speed the driving head rotates at 38 r.p.m.; at high speed, 57 r.p.m.

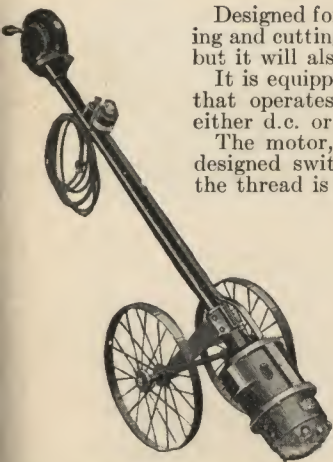
This drive is primarily designed for operating the large size of Toledo tools, threading and cutting off pipe from 2½ to 12 inches. No change is necessary in the threading tool, the operating head of the power drive merely slipping on the pinion shank in place of the ratchet handle.

However, a yoke casting and pair of short handles can be purchased as the connecting means between the Toledo No. 1 and the Tol-

edo Power Drive for threading 2-inch pipe and smaller.

With 50 or 60-Cycle A.C. or D.C. Motor.....each \$600.00  
With 25, 30, or 40-Cycle A.C. Motor.....each 700.00  
Special Attachment for No. 1 Tool.....each 5.00

## Toledo Universal Power Drives



Designed for operating Toledo threading and cutting tools from 4 inches down, but it will also operate the larger tools.

It is equipped with a Universal motor that operates on any 110-volt current, either d.c. or a.c. of any cycle.

The motor, controlled by a specially designed switch, is reversible, so after the thread is completed, the dies of the threading tool may be backed off by means of the power drive.

The variable speed motor speeds up on the light loads and slows down on the heavy work.

It is simple in construction. Has few working parts. Can be operated by the ordinary mechanic.

The drive is 6 feet over all and the wheels 18 inches in diameter.

Shipping weight, 231 pounds.  
Price, with ½ H.P. Universal 110-Volt Motor...each \$500.00

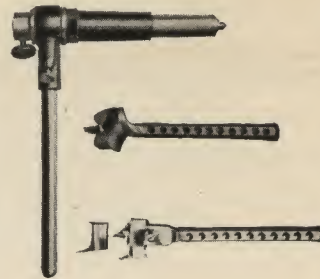
## Toledo Power Drive Helpers

This is an attachment for either Universal or Standard Toledo Power Drives. It provides the means for threading the smaller sizes rapidly and also makes possible the use of the Vosper pipe cutter for cutting off pipe from ½ to 2 inches and the use of an ordinary die stock for threading ½ to 2 inches.

It comprises a chuck and yoke attachment fitted in head of drive which permits threading or cutting tools to be held in place while the pipe is rotated in revolving chuck. When ordering specify whether Standard or Universal.

Price.....each \$120.00

## Toledo Ratchet Boring Tools



This tool readily bores holes through joists, beams and other wood members of buildings where the parallel or adjoining timbers interfere with the use of the brace and bit, or mallet and chisel.

It enables the operator to run pipe through cleanly bored holes, does its work rapidly and easily, and saves all the strength of weight carrying timbers.

It has been found especially valuable in remodeling jobs where piping has had to be installed in structures already built.

Price, Boring Tools, without Bits.....each \$15.00  
Price, Expansion Bits, 1¼ to 2½-Inch, Incl.....each 9.00  
Price, 2½-Inch Solid Bits, Extra.....each 6.00  
Price, 2 -Inch Solid Bits, Extra.....each 4.50  
Price, 1½-Inch Solid Bits, Extra.....each 3.00  
Price, 1 -Inch Solid Bits, Extra.....each 2.20

## Reed 3-Way Stock and Q &amp; E Pipe Dies



The Reed 3-Way stock and die set is one of the most convenient and practical tools the plumber or steam-fitter can own. The stock acts as a permanent holder for the die. All the operator has to do when he goes out on a job is to pick up the stock, and he has with it all that is needed to thread any size of pipe within its range. The usual hunting around for dies and bushings, and the chance of losing them on the job, is entirely done away with.

Easy starting. Easy cutting. Stock equipped with die with the new double-threaded throat, a feature which, burr or no burr, causes the die to start the thread with great ease and without the customary pushing effort, and also a feature which has marked effect in reducing the power required to complete the thread.

Crooked thread if desired. Guide holes for Sets Nos. 614 and 625 are fitted with snap bushings which can be removed whenever the operator desires to cut a crooked thread. These stocks and dies are light, strong and compact.

The double threaded throat dies in these sets thread brass and steel pipe equally well.

Each set is packed in a waterproof fibre board shelf box.

Set No.	Threads Pipe Inches	Size Die Block Inches	Price per Set	PRICE, EACH	
				Extra Dies	Extra Stocks
601	1/8, 1/4, 3/8	1 5/8 x 1 5/8	\$10.00	\$1.40	\$6.10
602	1/4, 3/8, 1/2	1 5/8 x 1 5/8	10.00	1.40	6.10
603	3/8, 1/2, 3/4	1 5/8 x 1 5/8	10.00	1.40	6.10
614	1/2, 3/4, 1	2 x 2	11.00	1.40	6.80
625	3/4, 1, 1 1/4	2 1/2 x 2 1/2	13.00	1.60	8.20



**Nye Malleable Iron Stocks**

Fitted with Nye Skip-Tooth Dies



Dies made in Briggs (American) and Whitworth (English) standards, right and left hand. American Standard right-hand dies furnished unless otherwise specified. Handles are white plated. Guides are machined inside and out and have the pipe size marked on them.

A set consists of stock complete with dies and guides as listed. Each set is packed in a fibre board box.

**No. 1**Takes No. 1 ( $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{4}$ -inch) die of any make.

Set No.	Description	Ship. Wt., Lbs.	Price Each
1N1	Stock and Dies $\frac{1}{4}, \frac{3}{8}, 1$ Inch.....	11 $\frac{1}{4}$	\$12.25
1N2	Stock and Dies $\frac{3}{8}, \frac{1}{2}, \frac{3}{4}, 1$ Inch.....	12 $\frac{1}{2}$	15.00
1N3	Stock and Dies $\frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{3}{4}, 1$ Inch....	13	17.75
1N4	Stock and Dies $\frac{1}{8}, \frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{3}{4}, 1$ In.	14	20.50
....	Extra Stocks with Handles and Screws	7 $\frac{1}{4}$	3.50
....	Extra Dies.....	1	3.00
....	Extra Guides.....	$\frac{5}{16}$	.40
....	Extra Handles..... per pair	3 $\frac{1}{4}$	1.25
....	Extra Name Plate.....	$\frac{1}{4}$	.60
....	Extra Screws (3).....	$\frac{1}{8}$	.30

**No. 1 $\frac{1}{2}$** Takes No. 1 $\frac{1}{2}$  ( $3 \times 3 \times \frac{3}{4}$ -inch) dies of any make.

Set No.	Description	Ship. Wt., Lbs.	Price Each
1 $\frac{1}{2}$ N1	Stock and Dies 1, 1 $\frac{1}{4}, 1\frac{1}{2}$ Inch.....	11 $\frac{3}{4}$	\$15.75
1 $\frac{1}{2}$ N2	Stock and Dies $\frac{3}{4}, 1, 1\frac{1}{4}, 1\frac{1}{2}$ Inch....	13 $\frac{3}{4}$	19.50
1 $\frac{1}{2}$ N3	Stock and Dies $\frac{3}{8}, \frac{1}{2}, \frac{3}{4}, 1, 1\frac{1}{4}, 1\frac{1}{2}$ In.	17 $\frac{3}{8}$	27.00
1 $\frac{1}{2}$ N4	Stock and Dies $\frac{1}{8}, \frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{3}{4}, 1, 1\frac{1}{4}$		
....	1 $\frac{1}{2}$ Inch.....	20 $\frac{1}{2}$	33.00
....	Extra Stocks with Handles and Screws	7 $\frac{5}{8}$	4.00
....	Extra Handles..... per pair	3 $\frac{1}{4}$	1.50
....	Extra Dies.....	1 $\frac{1}{16}$	4.00
....	Extra Guides.....	$\frac{1}{2}$	.60
....	Extra Name Plate.....	$\frac{5}{16}$	.80
....	Extra Screws (3).....	$\frac{1}{8}$	.40

**No. 2**Takes No. 2 ( $4 \times 4 \times \frac{7}{8}$ -inch) dies of any make.

Furnished with leader screw which makes easy starting on 1 to 2-inch pipe.

Set No.	Description	Ship. Wt., Lbs.	Price Each
2N1	Stock and Dies 1 $\frac{1}{4}, 1\frac{1}{2}, 2$ Inch.....	26 $\frac{1}{2}$	\$21.50
2N2	Stock and Dies 1, 1 $\frac{1}{4}, 1\frac{1}{2}, 2$ Inch.....	29 $\frac{1}{4}$	26.00
2N3	Stock and Dies $\frac{1}{2}, \frac{3}{4}, 1, 1\frac{1}{4}, 1\frac{1}{2}, 2$ Inch	36 $\frac{1}{2}$	35.00
....	Extra Stocks with Handles and Screws	16 $\frac{7}{8}$	8.50
....	Extra Leader Screw.....	1 $\frac{1}{2}$	2.00
....	Extra Dies.....	3	5.00
....	Extra Guides.....	$\frac{3}{4}$	.75
....	Extra Handles..... per pair	5 $\frac{3}{4}$	2.00
....	Extra Name Plate.....	$\frac{5}{8}$	1.00
....	Extra Top Plate Screws (2).....	$\frac{1}{8}$	.30
....	Extra Screws.....	$\frac{7}{16}$	.20

Prices shown are for standard tools. Special tools quoted upon request.

**Nye Adjustable Stocks**

Fitted with Nye Skip-Tooth Dies



These stocks take Armstrong pattern die of any make.

Handles are white plated. Guides machined inside and out and have the pipe size marked on them.

In Briggs (American) and Whitworth (English) standards, right and left hand. American standard right-hand dies furnished unless otherwise specified.

Set is packed in a fibre board box.

**No. 1**

No.	Description	Ship. Wt., Lbs.	Price Each
1NA1	Stock and Dies, $\frac{1}{4}, \frac{3}{8}, \frac{1}{2}$ Inch.....	4 $\frac{1}{2}$	\$12.00
1NA2	Stock and Dies, $\frac{1}{8}, \frac{1}{4}, \frac{3}{8}, \frac{1}{2}$ Inch..	5	14.50
....	Extra Dies.....	$\frac{1}{4}$	3.00
....	Extra Guides.....	$\frac{1}{8}$	.30
....	Extra Stock with Handles and Screws	3	3.25
....	Extra Handles..... per pair	1	.75
....	Extra Wrench.....	$\frac{1}{4}$	.20
....	Extra Collar Screw.....	$\frac{1}{16}$	.25
....	Extra Adjusting or Guide Screw....	$\frac{1}{16}$	.20

**No. 2**

No.	Description	Ship. Wt., Lbs.	Price Each
2NA1	Stock and Dies, $\frac{1}{2}, \frac{3}{4}, 1$ Inch.....	11	\$14.00
2NA2	Stock and Dies, $\frac{3}{8}, \frac{1}{2}, \frac{3}{4}, 1$ Inch....	12	17.50
2NA3	Stock and Dies, $\frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{3}{4}, 1$ In.	12 $\frac{3}{4}$	20.75
2NA4	Stock and Dies, $\frac{1}{8}, \frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{3}{4}, 1$		
....	Inch.....	13 $\frac{1}{2}$	24.00
....	Extra Stock with Handles and Screws	7	4.00
....	Extra Dies.....	$\frac{3}{4}$	3.50
....	Extra Guides.....	$\frac{1}{4}$	.40
....	Extra Handles..... per pair	3 $\frac{3}{8}$	1.25
....	Extra Collar or Adjusting Screw....	2 $\frac{1}{2}$ Oz.	.30
....	Extra Guide Screw.....	$\frac{1}{8}$	.30

**No. 2 $\frac{1}{2}$** 

No.	Description	Ship. Wt., Lbs.	Price Each
*2 $\frac{1}{2}$ NA1	Stock and Dies, $\frac{3}{4}, 1, 1\frac{1}{4}$ Inch.....	15	\$20.00
*2 $\frac{1}{2}$ NA2	Stock and Dies, $\frac{1}{2}, \frac{3}{4}, 1, 1\frac{1}{4}$ Inch..	16	24.25
....	Extra Stock with Handles and Screws	9	5.25
....	Extra Dies.....	1 $\frac{1}{8}$	4.00
....	Extra Guides.....	$\frac{3}{4}$	.60
....	Extra Handles..... per pair	3 $\frac{3}{8}$	1.25
....	Extra Collar or Adjusting Screw....	$\frac{3}{16}$	.35
....	Extra Guide Screw.....	$\frac{1}{8}$	.30

\*Single end dies.

**No. 3**

No.	Description	Ship. Wt., Lbs.	Price Each
3NA1	Stock and Dies, 1 $\frac{1}{4}, 1\frac{1}{2}, 2$ Inch.....	30	\$21.50
3NA2	Stock and Dies, 1, 1 $\frac{1}{4}, 1\frac{1}{2}, 2$ Inch..	33	26.00
3NA3	Stock and Dies, $\frac{1}{2}, \frac{3}{4}, 1, 1\frac{1}{4}, 1\frac{1}{2}, 2$		
....	Inch.....	41 $\frac{1}{4}$	34.00
....	Extra Stock with Handles and Screws	19 $\frac{1}{4}$	7.00
....	Extra Dies.....	2 $\frac{7}{8}$	5.00
....	Extra Guides.....	1 $\frac{1}{2}$	.75
....	Extra Handles..... per pair	5 $\frac{7}{8}$	2.50
....	Extra Collar or Adjusting Screw....	$\frac{7}{16}$	.50
....	Extra Guide Screw.....	$\frac{1}{8}$	.40

**Nye 2-Way Solid Die Stocks**

Fitted With Nye Skip-Tooth Dies

Takes No. 1 ( $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{4}$ -inch) dies. Briggs and Whitworth standards, right and left hand.

Set No.	Description	Ship. Wt., Lbs.	Price Each
N2W1	Stock and Dies, $\frac{3}{4}, 1$ -Inch Die with Extra $\frac{1}{2}$ -Inch Guide.....	10 $\frac{1}{4}$	\$8.25
N2W2	Stock and Dies, $\frac{1}{2}$ and $\frac{3}{4}$ -Inch Die with Extra $\frac{1}{2}$ -Inch Guide.....	10 $\frac{3}{8}$	8.25
....	Extra Dies.....	$\frac{3}{4}$	3.00
....	Extra Handles..... per pair	3 $\frac{1}{2}$	1.25
....	Extra Guides.....	$\frac{1}{4}$	.40
....	Extra Top Plate with Screws.....	13 $\frac{1}{16}$	.75





### Nye 3-Way Solid Die Stocks

Fitted with Nye Skip-Tooth Dies

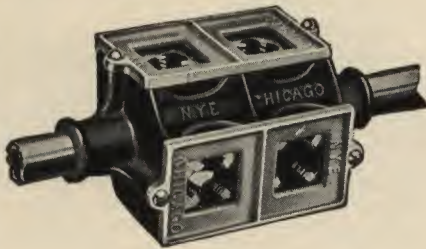
This stock takes No. 1 ( $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{4}$ -inch) die of any make. Briggs and Whitworth standards, right and left hand.

Each set is packed in a fibre board box.

Set No.	Description	Shipping Wt., Lbs.	Price Each
N3W1	Stock and Dies, $\frac{1}{2}$ , $\frac{3}{4}$ , 1 Inch.....	13 $\frac{3}{4}$	\$15.00
N3W2	Stock and Dies, $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ Inch....	14	15.00
.....	Extra Dies.....	$\frac{3}{4}$	3.00
.....	Extra Top Plate with Screws.....	4 $\frac{1}{2}$ Oz.	.55
.....	Extra Handles.....per pair	3 $\frac{1}{2}$	1.25
.....	Extra Guides.....	$\frac{1}{4}$	.40

### Nye Four-way Die Stocks

Made especially for work where constant use of dies from  $\frac{3}{8}$  to 1 inch, inclusive is necessary. The stock is a one-piece casting with bushings bored in the body opposite each die—no parts to become lost.

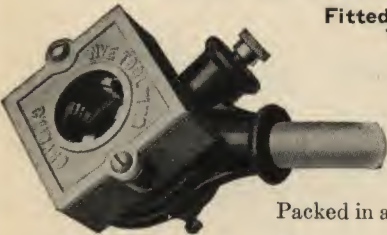


The dimensions of the dies used in this stock are  $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{4}$  inch.

Price, Complete with $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ and 1 inch Dies.....	each	\$17.50
“ Extra Dies.....	“	3.00

### Nye Solid Ratchet Die Stocks

Fitted with Nye Skip-Tooth Dies



Made in Briggs and Whitworth standards. White plated handles. Guides machined inside and out.

Packed in a fibre board box.

#### No. 1

Takes No. 1 ( $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{4}$ -inch) die.

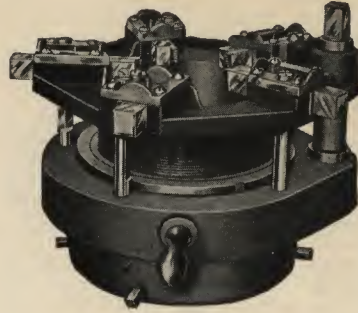
Set No.	Description	Ship. Wt., Lbs.	Price Each
1RS1	Stock and Dies, $\frac{1}{2}$ , $\frac{3}{4}$ , 1 Inch.....	8 $\frac{1}{2}$	\$16.50
1RS2	Stock and Dies, $\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 Inch..	9 $\frac{3}{4}$	21.00
.....	Extra Stocks with Handle and Screws	5 $\frac{1}{2}$	8.00
.....	Extra Dies.....	$\frac{7}{8}$	3.00
.....	Extra Guides.....	$\frac{1}{4}$	.40
.....	Extra Handle.....	1 $\frac{1}{8}$	.60
.....	Extra Name Plate with Screws.....	$\frac{1}{4}$	.55
.....	Extra Die Head.....	1 $\frac{1}{4}$	2.00
.....	Extra Ratchet Case.....	1 $\frac{1}{4}$	1.25
.....	Extra Guide Ring.....	$\frac{7}{16}$	.40
.....	Extra Ratchet Pawl, Complete.....	1 $\frac{1}{2}$ Oz.	.55

#### No. 1 $\frac{1}{2}$

Takes No. 1 $\frac{1}{2}$  ( $3 \times 3 \times \frac{3}{4}$ -inch) die.

1 $\frac{1}{2}$ RS1	Stock and Dies, 1, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$ Inch.....	13 $\frac{5}{8}$	\$19.50
1 $\frac{1}{2}$ RS2	Stock and Dies, $\frac{1}{2}$ , $\frac{3}{4}$ , 1, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$ Inch	18 $\frac{1}{4}$	27.00
.....	Extra Stocks with Handle and Screws	8 $\frac{1}{2}$	10.00
.....	Extra Dies.....	1 $\frac{5}{16}$	4.00
.....	Extra Guides.....	$\frac{9}{16}$	.60
.....	Extra Name Plate.....	$\frac{5}{16}$	.65
.....	Extra Die Head.....	2 $\frac{1}{8}$	3.00
.....	Extra Ratchet Case.....	2	1.75
.....	Extra Handle.....	1 $\frac{5}{8}$	1.00
.....	Extra Ratchet Pawl, Complete.....	$\frac{1}{4}$	.60
.....	Extra Guide Ring.....	1 $\frac{3}{16}$	.55

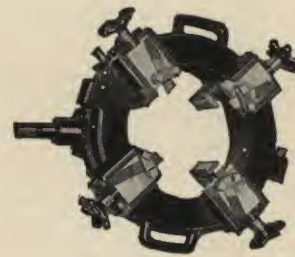
### No. 25 Toledo Geared Adjustable Pipe Threading Devices



Threads 7 sizes of pipe, from  $2\frac{1}{2}$  to 6 inches inclusive with 1 set of dies. Die segments are mounted on heavy steel holders, which are pushed backward or forward, thus accommodating the dies to the several sizes of pipe. Extra set of dies and ratchet handle are furnished with tool. Extra dies of 5 segments supplied at \$8.00 each.

No. 25, Ship. Wt. 222 Lbs.....each \$230.00

### Toledo Ratchet Geared Pipe Cutters



The Toledo Cutters are adapted for cutting off pipe from  $2\frac{1}{2}$  to 12 inches in diameter.

The cutting is done by four knives which are fed by hand. Two of these knives are beveled across the edge and cut out a V-shaped section of the pipe; the other two knives are square and follow in the V-shaped cut and sweep out the edges, thus eliminating any tendency the knives might have to bind in the cut.

It has been practically impossible to cut off extra heavy or double extra heavy pipe with any previously existing hand cutter. These conditions do not affect the working qualities of the Toledo Pipe Cutter in any respect; it merely takes a longer time to cut through the walls of the extra heavy pipe than it does to cut standard pipe.

The tool is fastened to the pipe by a four-jawed chuck, each jaw being actuated independently and containing a set of size marks so the tool can be centered on the pipe quickly.

The knives are straight segments of special steel and can be readily reground. They make a clean, sharp cut, and will cut off a section of pipe only  $\frac{1}{16}$  inch long if necessary from end of pipe.

The tool is driven by a pinion working on a bevel gear—the pinion being operated with a ratchet handle or the Toledo Power Drive.

Price is for complete cutter with ratchet handle.

No.	Capacity Pipe Inches	Shipping Weight Pounds	Price Each	Cutter Blades Price Set of 4
250	$2\frac{1}{2}$ to 6	121	\$80.00	\$3.20
300	$4\frac{1}{2}$ to 8	162	105.00	3.20
350	7 to 10	178	130.00	3.20
400	9 to 12	211	150.00	3.20

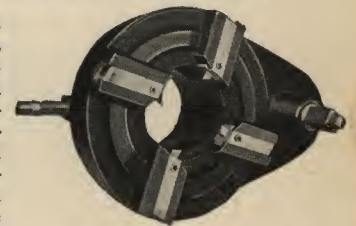
### Toledo Automatic Pipe Cutters

These rapid cutters cut smoothly and leave a straight square end cut without burr inside and the outside neatly bevelled. Knives are fed automatically. A single hand wheel sets them for cutting or the quick return of the knives after the pipe is cut off.

Furnished in 2 sizes. No. 40 has 2 to 4-inch pipe capacity; No. 80,  $4\frac{1}{2}$  to 8-inch pipe capacity.

Operated either with the regular ratchet handles furnished with Toledo geared threading tools, or the Toledo Power Drive.

No. 40, Weight, 91 Pounds.....each \$60.00  
No. 80, Weight, 160 Pounds.....each 180.00





## Nye Saunders Type Cutters

All parts of cutter are interchangeable with other standard Saunders cutters.



With knurled-edge thin-blade cutter wheels. Blades of wheels measure about  $\frac{1}{16}$  inch in thickness; straight from hub to cutting edge (unless smooth-edge are specified).

No.	Cuts Pipe In.	Ship. Wt. Lbs.	PRICE					
			Com-plete	Body Each	Wheels Each	Roll-ers Each	Pins per Doz.	Blocks and Wheels Each
1	$\frac{1}{8}$ -1	4	\$3.00	\$1.00	\$1.00	\$1.24	\$1.20	\$1.25
2	1-2	$7\frac{1}{4}$	4.50	1.50	.60	.32	1.20	1.75
3	2-3	$13\frac{1}{2}$	11.00	6.00	1.10	.50	1.80	2.75
4	$2\frac{1}{2}$ -4	18	18.00	10.00	1.10	.50	1.80	3.50
5	4-6	$26\frac{7}{8}$	28.00	15.00	1.10	.60	1.80	4.00

## Nye Pipe Cutters



For use on extra heavy pipe.

Made of fine tool steel. Equipped with

Nye knurled wheels, hardened and tempered in oil.

## No. 1 Pipe Cutters

No.	Cap. Pipe Inches	PRICE, EACH			
		Com-plete	Extra Wheels	Extra Rollers	Wheel Blocks
1	$\frac{1}{8}$ to $1\frac{1}{4}$	\$3.75	\$1.70	\$1.24	\$1.25

## No. 2 Pipe Cutters

The bottom of No. 2 cutter frame is tapped for  $\frac{1}{2}$ -inch pipe, allowing the use of an extra handle.

No.	Cap. Pipe Inches	PRICE, EACH			
		Com-plete	Extra Wheels	Extra Rollers	Wheel Blocks
2	$\frac{1}{4}$ to 2	\$5.75	\$1.80	\$1.50	\$1.75

## Nye Cutter Pins

No.	PRICE, PER DOZEN					
	TYPE					
	Barnes	Saunders	*Nye	Nye	Armstrong	Holland
1	\$1.00	\$1.20	\$1.00	\$1.20	\$1.20	\$1.20
2	1.00	1.20	1.00	1.80	1.20	1.20
3	1.00	1.80	1.00	....	1.80	1.80
4	2.00	1.80	....	....	....	....
5	2.00	1.80	....	....	....	....

## Nye Cutter Rollers

No.	PRICE, EACH				
	TYPE				
	Nye	Saunders	*Nye	Armstrong	Holland
1	\$1.24	\$1.24	\$1.25	\$1.25	\$1.24
2	.50	.32	.25	.30	.32
3	...	.50	.50	.50	.50
4	...	.50	...	...	...
5	...	.60	...	...	...

\*Fits Trimo Pipe Cutters.

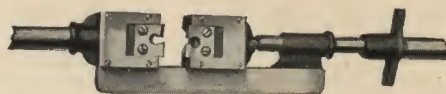
## Nye Barnes Type 3-Wheel Pipe Cutters



For cutting pipe in corners and where cutters cannot be revolved entirely around pipe. Frame is of certified malleable castings; pins are hardened. With 3 knurled thin-blade cutter wheels (unless smooth-edge are specified). Parts are interchangeable with other makes of cutters of the same pattern.

No.	Cuts Pipe Inches	Ship. Wt. Lbs.	PRICE				
			Com-plete	Wheels Each	Pins per Doz.	Body Each	Slide and Handle Wheel and Screw Each
1	$\frac{1}{8}$ to 1	$3\frac{1}{2}$	\$4.50	\$1.50	\$1.00	\$1.75	\$1.75
2	$\frac{1}{2}$ to 2	$5\frac{1}{2}$	6.00	.60	1.00	2.60	1.25
3	$1\frac{1}{2}$ to 3	$8\frac{1}{2}$	10.00	.80	1.00	4.55	2.25
4	$2\frac{1}{2}$ to 4	$15\frac{1}{4}$	20.00	1.00	2.00	9.50	4.50
5	4 to 6	$24\frac{1}{8}$	30.00	1.10	2.00	13.75	7.00
6	6 to 8	$29\frac{1}{2}$	40.00	1.10	2.00	20.00	9.00

## Beaver Square End Pipe Cutters



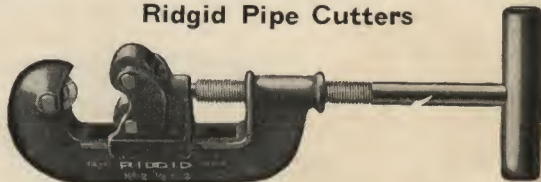
This pipe cutter cuts like a lathe tool, each turn removing a thin shaving until the pipe is severed. Leaves no burr to be reamed or filed, or to reduce the capacity of the pipe, and threading dies start easily and with less wear.

Rigid, simple and fool-proof in construction.

The knives give hundreds of cuts on the hardest pipe, and are easily resharpened.

No. ....	1	5
Capacity Pipe.....inches	$\frac{1}{8}$ -1	$\frac{1}{2}$ -2
Price Complete.....each	\$18.00	\$20.00
Price Knives.....per set	1.20	1.50

## Ridgid Pipe Cutters



This cutter has a thin removable blade which cuts off pipe practically without burr. Socket wrench in handle ends, used with the flat wrench furnished, makes changing of blades easy. The cutter housing, made of certified malleable, is constructed to protect the cutting blade. Rollers are interchangeable with blade assembly to make a three-wheel cutter. Pins are all interchangeable.

No. ....	1	2	3	4
Cuts Pipe.....in.	$\frac{1}{8}$ to $1\frac{1}{4}$	$\frac{1}{8}$ to 2	1 to 3	2 to 4
Price.....each	\$4.50	6.00	10.00	18.00

## Repairs for Ridgid Pipe Cutters



SLEEVE NUT WRENCH

No.	PRICE, EACH						
	Blades per Doz.	Sleeve Nut	Frames	Screw and Handle	Roll Housing	Rolls	Pin Washers Clips per Doz. Wrench
1	\$3.00	\$1.40	\$2.25	\$1.25	\$1.25	\$1.20	\$1.20
2	3.00	.40	2.50	1.60	1.25	.30	.20
3	3.50	.60	3.25	2.50	2.25	.40	.20
4	3.50	.60	4.50	2.50	3.00	.40	.20

## Nye Knife Blade Cutter Wheels



Made from high grade tool steel, hardened and tempered in oil. The blades are less than  $\frac{1}{16}$ th of an inch thick and are straight from the hub to the cutting edge.

They cut with one-third the power and time required by the old type wheels.

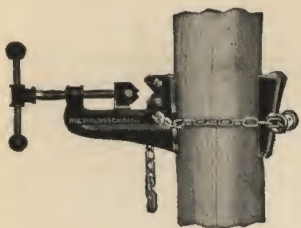
Made both knurled and smooth-edged; same price.

Wheel No.	PRICE, EACH					
	TYPE					
	Barnes	Saunders	Nye	*Nye	Armstrong	Holland
1	\$1.50	\$1.50	\$1.70	\$1.60	\$1.50	\$1.50
2	.60	.60	.80	.60	.60	.60
3	.80	1.10	...	.90	1.10	1.10
4	1.00	1.10	...	...	...	...
5	1.10	1.10	...	...	...	...

\*Made to fit Trimo pipe cutters.



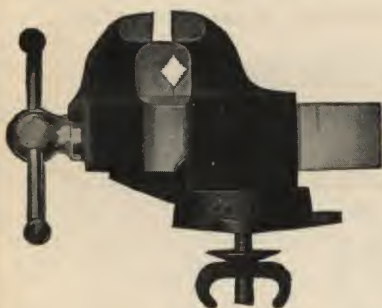
## Nye Chain Pipe Vises



Can be used as a bench vise or attached to a post or tree. Takes pipe sizes  $\frac{1}{8}$  to 2 inch, including a 2-inch coupling.

The chain is steel, 40 inches long, and guaranteed to stand a strain of 2000 pounds.

Price, Complete with Chain Attachments.....	each	\$9.50
Price, Extra Upper Jaws.....	each	.50
Price, Extra Lower Jaws.....	per pair	1.35
Price, Extra Chain Attachments.....	each	3.50
Price, Extra Upper Jaw Clamps.....	per pair	.65
Price, Extra Screw with Handle.....	each	1.40

Reed  
Combination  
Pipe Vises

## Swivel Base

Designed for severe service requirements. Pipe jaws are milled from solid tool steel bars, tempered in oil. Front pipe jaw is reversible.

No.	Each	Jaws (3) per Set	Holds Pipe, In.	Width Jaw, In.	Weight Pounds
31	\$16.00	\$2.40	$\frac{1}{8}$ to $2\frac{1}{2}$	$3\frac{1}{2}$	46
32	22.00	3.40	$\frac{1}{8}$ to $3\frac{1}{2}$	$4\frac{1}{4}$	72
33	32.00	5.60	$\frac{1}{8}$ to $4\frac{1}{2}$	5	119
34	45.00	8.00	$\frac{1}{8}$ to 6	6	178

Williams Vulcan Drop-Forged  
Chain Pipe Vises

Unbreakable, compact, rapid in action and positive in grip.

It is made entirely of wrought steel with drop-forged jaws, saw tempered for file sharpening.

Serviceable upon and suitable for fastening to bench or post.

Black finish with orange panel in jaw.



No.	Com- plete Each	EXTRA PARTS, EACH					Cap. Pipe In.	Approx. Size Folded In.	Approx. Wt. Lbs.
		Jaws per Pr.	Chain with Screws	Handle with Nuts	Nuts				
1	\$7.00	\$3.00	\$2.50	\$1.40	\$2.20	\$1.40	$\frac{1}{8}$ -2	4x 5x 6	4
2	15.00	7.00	4.80	1.40	4.20	2.70	$\frac{1}{4}$ -4	6x 8x 8	10
3	27.00	12.00	9.00	2.50	7.00	4.00	$\frac{1}{2}$ -6	8x 9x11	18
4	36.00	18.00	12.00	2.50	7.00	4.00	$\frac{1}{2}$ -8	8x10x12	30

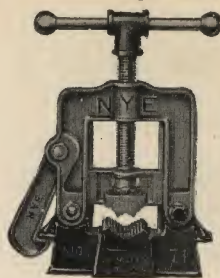
## Crown Improved Portable Benches



Made of malleable iron. Pipe bender is an integral part of body casting. Legs are drilled that they may be lagged to floor. Can be drilled to hold any standard vise.

Price, Complete with Legs and Vise.....	each	\$32.00
Price, Less Vise....	"	24.00
" " Legs and Vise.....	each	20.00

## Nye Self-Locking Pipe Vises



Will hold iron or brass pipe or plated tubing, also short nipples without danger of marring.

The jaws have one piece in upper and one piece in lower, assuring perfect contact with pipe for full length of jaws, thus eliminating any possibility of bending the smaller sizes of pipe, a trouble frequently experienced with the type jaws having two sections to the lower portion.

No.	Each	Capacity Inches	No.	Each	Capacity Inches
700	\$3.60	$\frac{1}{8}$ to $1\frac{1}{2}$	72	\$7.50	$\frac{1}{2}$ to $3\frac{1}{2}$
70	4.25	$\frac{1}{8}$ to 2	73	11.00	$\frac{1}{8}$ to $4\frac{1}{2}$
71	5.00	$\frac{1}{8}$ to $2\frac{1}{2}$	..	.....	.....

## Nye Bench Pipe Vises



The Nye Bench Pipe Vise has a special feature in the construction of the jaws. The upper jaw is V-shape and acts like a swivel. The strength of one finger is sufficient to tighten the vise so that it will resist any turn or pull that may be applied.

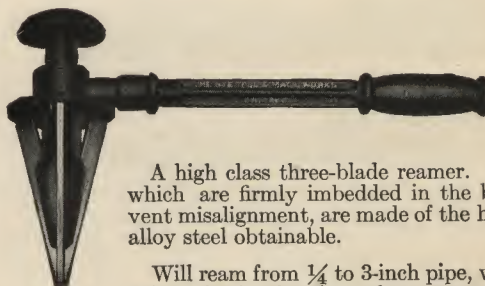
The jaws are made of the best tool steel, hardened and tempered.

The long screw is made of cold-rolled steel. Takes sizes from  $\frac{1}{8}$ -inch to 2-inch inclusive, including a 2-inch coupling.

Weight,  $12\frac{1}{4}$  pounds.

Price.....	each	\$6.00
" Extra Upper Jaws.....	"	.50
" " Lower ".....	per pair	1.35
" Upper Jaw Clamps.....		.65

## Nye Ratchet Reamers



A high class three-blade reamer. The blades, which are firmly imbedded in the body to prevent misalignment, are made of the highest grade alloy steel obtainable.

Will ream from  $\frac{1}{4}$  to 3-inch pipe, which makes this tool take the place of two reamers.

Price.....	each	\$7.50
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## G T D Bit Brace Burring Reamers

## Spiral Fluted



This burring reamer is made of high grade steel and is designed especially for removing burrs caused by cutting pipe. Also used extensively for countersinking.

Great care is taken in grinding this tool to adapt it for use in a variety of materials.

No.	Capacity Pipe, In.	Price Each	No.	Capacity Pipe, In.	Price Each
241	$\frac{1}{8}$ to $1\frac{1}{2}$	\$1.00	242 $\frac{1}{2}$	$\frac{1}{4}$ to $1\frac{1}{4}$	\$1.50
242	$\frac{1}{8}$ " 1	1.25	244	$\frac{1}{4}$ " 2	3.00

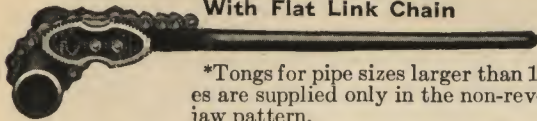






### Williams' Improved Vulcan Drop-Forged Chain Pipe Tongs

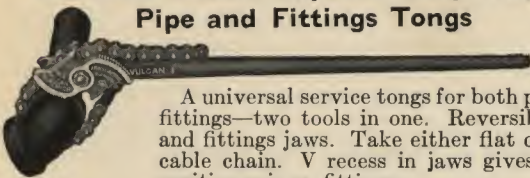
With Flat Link Chain



\*Tongs for pipe sizes larger than 12 inches are supplied only in the non-reversible jaw pattern.

No.	Complete Each	Chains Each	EXTRA		Capacity Pipe Inches	Lgth. In.	Wt. Lbs.
			Jaws per Pair	Nuts & Studs per Set			
30	\$5.00	\$1.50	\$2.00	\$0.40	1/8 to 3/4	13 3/4	2
31	7.00	2.00	3.50	.50	1/8 to 1 1/2	20	5 3/4
32	10.00	3.00	5.50	.70	1/4 to 2 1/2	27	10
33	14.00	5.00	8.00	.90	3/4 to 4	37	17
33 1/2	18.00	7.00	9.50	1.10	1 to 6	44 1/2	24
34	22.00	9.00	11.00	1.40	1 1/2 to 8	50 1/2	31
35	36.00	15.00	15.00	1.80	2 to 12	64 1/2	52
*15 1/2	60.00	30.00	24.00	....	4 to 16	85	98
*16	80.00	40.00	32.00	....	4 to 18	87	137

### Williams Vulcan Superior Drop-Forged Pipe and Fittings Tongs



A universal service tongs for both pipe and fittings—two tools in one. Reversible pipe and fittings jaws. Take either flat chain or cable chain. V recess in jaws gives quick, positive grip on fittings.

No.	Complete	Extra Chain	Extra Jaws *per Pr.	Extra Bolt and Nut	Capacity Fittings In.	Extreme Lgth. In.	Wt. Lbs.
0	\$5.00	\$1.50	\$2.00	\$0.28	1/8-3/4	13 3/4	1 3/4
1	7.00	2.00	3.50	.36	1/8-1 1/2	20	5 1/2
2	10.00	3.00	5.50	.46	1/4-2 1/2	27	10
3	14.00	5.00	8.00	.60	3/4-4	37	16
3 1/2	18.00	7.00	9.50	.70	1-6	44 1/2	25
4	22.00	9.00	11.00	.90	1 1/2-8	50 1/2	35
5	36.00	15.00	15.00	1.30	2-12	64 1/2	55

\*If only a single jaw is wanted, specify right or left.

### Machinists' Knife Handle Wrenches



Similar to Railroad Special Wrench; with wooden handle, head and bar drop-forged; solid steel screw.

Length, inches	6	8	10	12	15	18	21
Opens...inches	1 1/16	1 1/2	2	2 3/8	2 13/16	3 3/8	3 15/16
Price, per doz.	\$15.00	18.00	22.00	28.00	38.00	48.00	58.00

### Nye Closet Spud Wrenches



A light, handy tool for the plumber. Strong enough to stand any strain.

Sizes, 1 1/4 x 1 1/2 and 1 1/4 x 2 inches.

Price, Shipping Weight, 1 3/8 Pounds.....each \$1.00

### Model M Billings Dependable Combination Slip Joint Pliers



Lgth. In.	Black Each	N.P. Each	Extra Bolts Each	Extra Nuts Each
6	\$1.50	\$1.65	\$0.09	\$0.06
8	1.75	1.95	.09	.06
10	1.95	2.30	.12	.09
14	2.65	3.25	.12	.09

### Pipe Taps



Briggs standard right hand taper threads are furnished unless otherwise specified.

Pipe Size In.	Carbon Steel Each	High Speed Steel Each	No. of Threads To In.		Length Thread In.	Length Over All In.
			Amer. Std.	Whitworth Std.		
1/8	\$1.00	\$1.60	27	28	3/4	2 1/8
1/4	1.20	1.80	18	19	1 1/16	2 7/16
3/8	1.60	2.30	18	19	1 1/16	2 9/16
1/2	2.00	4.40	14	14	1 3/8	3 1/8
5/8	2.80	....	....	14	1 3/8	3 3/8
3/4	2.80	6.10	14	14	1 3/8	3 1/4
7/8	4.40	....	....	14	1 9/16	3 1/2
1	4.40	9.20	11 1/2	11	1 3/4	3 3/4
1 1/4	5.00	13.10	11 1/2	11	1 3/4	4
1 1/2	6.60	17.70	11 1/2	11	1 3/4	4 1/4
1 3/4	8.00	....	....	11	1 3/4	4 3/8
2	10.00	24.00	11 1/2	11	1 3/4	4 1/2

### Pipe Reamers



Pipe Size In.	Carbon Steel Each	High Speed Steel Each	Length Over All In.
1/8	\$1.00	\$1.60	2 1/8
1/4	1.20	1.80	2 7/16
3/8	1.60	2.30	2 9/16
1/2	2.00	4.40	3 1/8
5/8	2.80	....	3 3/8
3/4	2.80	6.10	3 1/4
7/8	4.40	....	3 1/2
1	4.40	9.20	3 3/4
1 1/4	5.00	13.10	4
1 1/2	6.60	17.70	4 1/4
1 3/4	8.00	....	4 3/8
2	10.00	24.00	4 1/2

### Star Drills



For brick, stone and concrete.

Length Inches	PER DOZEN					
	DIAM. OF DRILL, INCHES					
	1/4	5/16	3/8	7/16	1/2	5/8
12	\$8.50	\$8.50	\$8.50	\$9.00	\$10.00	\$12.00
18	11.00	11.00	11.00	11.50	12.50	15.00
24	13.50	13.50	13.50	14.00	15.00	17.50

Length Inches	DIAM. OF DRILL, INCHES					
	3/4	7/8	1	1 1/8	1 1/4	1 1/2
12	\$14.00	\$16.00	\$18.00	\$24.00	\$30.00	\$50.00
18	17.50	20.00	22.50	28.00	35.00	56.00
24	20.00	22.50	25.00	32.00	40.00	62.00

### No. CG Plomb Concrete Gads



No. CG Concrete Gad or Bull Point is used for breaking through and breaking up concrete pavements, walls, floors, etc. The gradual taper permits the entrance of the gad into the pavement with a minimum amount of effort and yet does its work without wedging into the pavement. The heat treatment gives a hard lasting cutting point that withstands an enormous amount of pounding.

#### 12-Inch Length

Stock.....in.	5/8	3/4	7/8	1	1 1/4	1 1/2
Wt., per Doz.....lbs.	12	17	22	32	45	70
Each.....	\$0.75	1.00	1.10	1.25	1.85	2.50

#### 18-Inch Length

Stock.....in.	1	1 1/4	1 1/2
Wt., per Doz.....lbs.	47	74	100
Each.....	\$1.65	2.40	3.25



No. 21 Hack Saw Frames



The No. 21 frame is made of nickel-plated steel and has a black enameled handle. Adjustable from 8 to 12

inches. Blades are tightened by turning handle and may be faced in four directions.  
Price, No. 21, Frame Only .....each \$ .75

No. 61 Hack Saw Frames

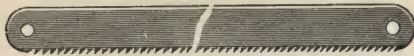
Adjustable frame, 8 to 12 inches, nickel-plated and polished.

Rubber pistol grip handle. One in a box.



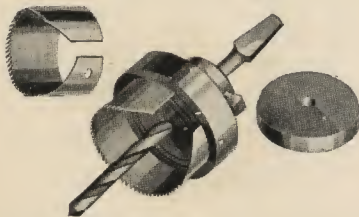
No. 61, with 8-Inch Blade.....per doz. \$12.00

Hack Saw Blades



Length Inches	PRICE, PER DOZEN Common	PRICE, PER DOZEN Flexible	Length Inches	PRICE, PER DOZEN Common	PRICE, PER DOZEN Flexible
8	\$.67	\$.67	10	\$.84	\$.84
9	.75	.75	12	1.00	1.00

Excelso Rotary Hack Saw Tools



Rapidly and easily cuts holes through metal to fit pipe size taps. One tool cuts holes for 1, 1¼, 1½ or 2-inch pipe tap holes by inserting proper size blade. Cuts labor cost 75 per cent for making holes through metal or other material. Its operation is simple. Used in an ordinary hand brace.  
Price, Including 2 Blades of Each Size.....each \$7.50  
Price, Extra Blades.....each .35

Soldering Coppers  
Pointed Pattern



Furnished in ½, 1, 1½, 2, 2½, 3, 4, 5, 6, 7, 8, 10, 12 and 14 pounds to the pair. When ordering state weight.  
Prices upon application.

Soldering Copper Handles



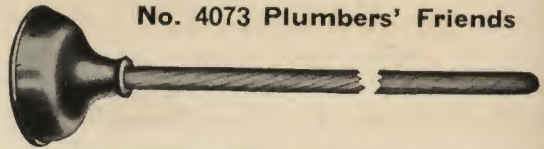
Soft wood and wired. Size about 1¼x5½ inches.  
Price.....per gross \$15.00



Cold  
Chisels

Point.....inches	5/16	3/8	7/16	1/2	9/16
Stock....."	1/4x4 1/2	5/16x5 1/2	3/8x5 3/4	7/16x6	1/2x6
Price.....per dozen	\$13.80	14.40	14.40	15.00	15.60
Point.....inches	5/8	3/4	7/8	1	1 1/8
Stock....."	9/16x6 1/2	5/8x6 3/4	3/4x7 1/2	7/8x8	1x8 1/4
Price.....per dozen	\$16.20	17.40	18.60	21.60	24.00

No. 4073 Plumbers' Friends



Regular plumbers' friend with cup of good rubber.  
4-Inch Cup with 24-Inch Handle.....each \$1.25  
6-Inch Cup with 24-Inch Handle.....each 2.00

Ardmore Brass Suction and Force Pumps

An effective tool that will keep the drains in perfect running order. It has both suction and force action, is stronger than the ordinary rubber force cup plunger and will do the work in less than half the time.

It is made of heavy seamless brass tubing measuring 20 inches long by 1½ inches in diameter.

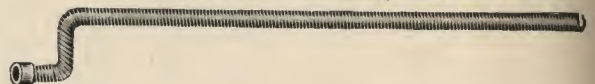
Furnished with a 5½-inch high grade reversible red rubber cup.

This pump is so constructed that all parts are interchangeable and easily replaced.

Each.....\$5.50

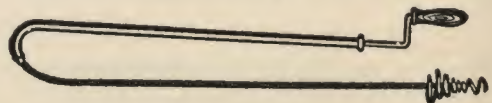


No. 127 Best Friend Pipe Cleaners



Made from flexible spiral steel spring, heavily japanned.  
Size.....feet 5½ 10 15 20 25  
Weight.....pounds 2 3½ 5 8 11  
Price, No. 127.....each \$1.20 2.00 3.30 3.70 4.00

Type C Coil Spring Closet Augers



The spring is made of high grade 14 gauge oil tempered spring wire, 7/16-inch diameter, black enameled. The guide tube is of seamless brass, highly polished and lacquered, with end bent so that spring is guided into the bowl passage. For removing obstructions from closets. Handle is turned until obstruction is caught by screw, then removed by pulling back on the handle and holding down on the tube. Improved, patented, one-piece cone screw.

No.....	3C	6C	9C
Type C Augers.....each	...	...	...
Length.....feet	3	6	9
Weight.....pounds	2	2¾	3½

Steel Sewer Rods



Thickness Inches	Width Inches	APPROXIMATE WEIGHT, POUNDS			Price per Foot
		50	75	100	
1/16	1/2	..	..	10.65	\$ .10
1/16	5/8	..	..	13.31	.13
1/16	3/4	..	..	16.00	.15
1/16	1	..	..	21.30	.20
1/8	3/4	16	24	32.00	.20
1/8	1 1/4	27	40	54.00	.25
1/8	1 1/2	32	47	64.00	.30



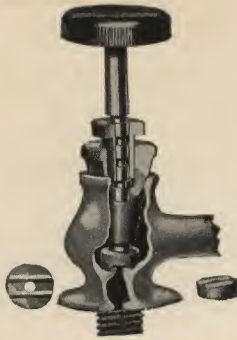
**Skinner Bibb Reseaters**

The Skinner Bibb Reseater is fed by a thread, making good mechanical results.

The bonnet is slipped off the leaky faucet and the tool inserted, fitted with proper cutter. Turn the feed screw down until the cutter rests lightly on the bibb seat. Then turn the wheel steadily, unyieldingly with occasional slight twists of the feed screw.

Equipped with 4 cutters. For  $\frac{1}{4}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$  and  $\frac{3}{4}$ -inch bibbs of the same material and workmanship as the cutters furnished with the Skinner Valve Reseater.

Price .....each \$2.00

**Skinner Self-Aligning Bibb Reseaters**

For reseating flat seat bibbs in place.

Five Skinner cutters and 12 pilots cover all flat seat bibbs,  $\frac{1}{4}$  to  $\frac{3}{4}$  inch. Cutters are guaranteed to stay sharp.

In operating, cutter is held down to seat by a feed screw. Tool cannot chatter; leaves the seat smooth as glass.

Packed in a strong canvas bag; the cutters and guide pilots are strung on a special wire clip.

Price, Complete.....each \$4.50

**Skinner Valve Reseating Tools**

For reseating all flat and taper seat, globe or angle valves, in place, accurately and quickly. This tool lines up through the bonnet insuring an accurate cut. Each cutter has 2 parallel blades—producing an offset or shaving cut. Fits all globe valves.

This is the only inexpensive tool with mechanical screw feed. It can not chatter.

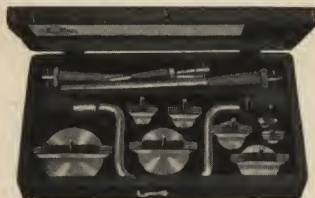
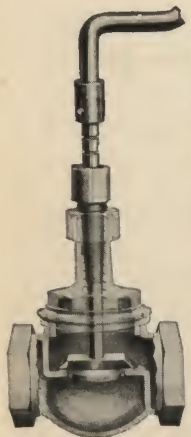
Good valves can be reseated 10 to 20 times.

The first 2 or 3 jobs pay for the tool.

Operated with bit brace provided.

For taper seat valves, turn cutter other side up.

Packed in hardwood case and is guaranteed against defects.



Range Inches	Weight Pounds	Size of Box Inches	Price Each
$\frac{1}{2}$ to 2	6	$9\frac{3}{4} \times 5\frac{3}{4} \times 2\frac{1}{4}$	\$20.00
$\frac{1}{2}$ to 3	12	$13\frac{1}{4} \times 7\frac{1}{4} \times 2\frac{1}{4}$	30.00

**Asbestos Lead Joint Runners**

Made of specially prepared solid asbestos rope, having a ferule on each end, and provided with clamping device for fastening in place on the pipe.

Size No.	Size, Rope Inches	For Pipe Inches	Price Each
1	$\frac{3}{4}$	2, 3 and 4	\$2.15
2	$\frac{3}{4}$	4, 5 " 6	2.35
3	1	6, 8 " 10	4.15
4	1	10, 12 " 14	5.40
5	$1\frac{1}{4}$	16, 18 " 20	11.00
6	$1\frac{1}{4}$	24	12.25
7	$1\frac{1}{4}$	30	13.95
8	$1\frac{1}{4}$	36	15.75
9	$1\frac{1}{4}$	42	17.65
10	$1\frac{1}{4}$	48	18.80

**No. 7800 Melting Ladles**

These ladles are much superior in durability to wrought iron.

No. 7800	A	B	C	D
Plain.....per dozen	\$1.88	2.23	4.13	4.73
Bowl.....inches	3	4	5	6
Length Handle.....inches	12 $\frac{1}{4}$	12 $\frac{1}{4}$	14 $\frac{1}{4}$	15 $\frac{1}{4}$
Lead Capacity.....pounds	2	4	7	12

**Melting Pots without Lip**

Cast bowl. Wrought iron handle.

Diam. In.	Depth In.	Cap. Lbs.	Wt. Lbs.	Price Each	Diam. In.	Depth In.	Cap. Lbs.	Wt. Lbs.	Price Each
4	2 $\frac{1}{4}$	8	2	\$ .40	8	4 $\frac{1}{4}$	35	6	\$1.40
5	2 $\frac{3}{4}$	10	2 $\frac{1}{2}$	.50	9	5 $\frac{1}{4}$	60	10	2.00
6	3 $\frac{1}{2}$	15	4	.70	10	5 $\frac{3}{4}$	90	15	2.80
7	3 $\frac{3}{4}$	20	5	1.00	..	..	..	..	.....

**Pouring Pots**

Size  
Inches  
6x8  
7x9 $\frac{1}{2}$

Price  
Each  
\$3.50  
4.50

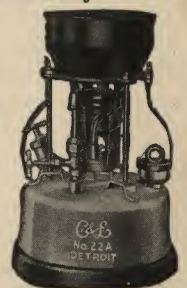
**C & L Coil Fire Pots**

No. 22A, Pump Type—No. 12A, Bulb Type  
1-Gallon Capacity  
For Gasoline

The drawn steel tank is leak-proof and heavily coated with tin inside and out. This prevents rust that works up into the coil and burner. Improved quick detachable coil unit and hinged door coil cup make it easy to clean and repair. Pump is extra large and powerful, producing air pressure quickly. Uprights and fittings are extra heavy.

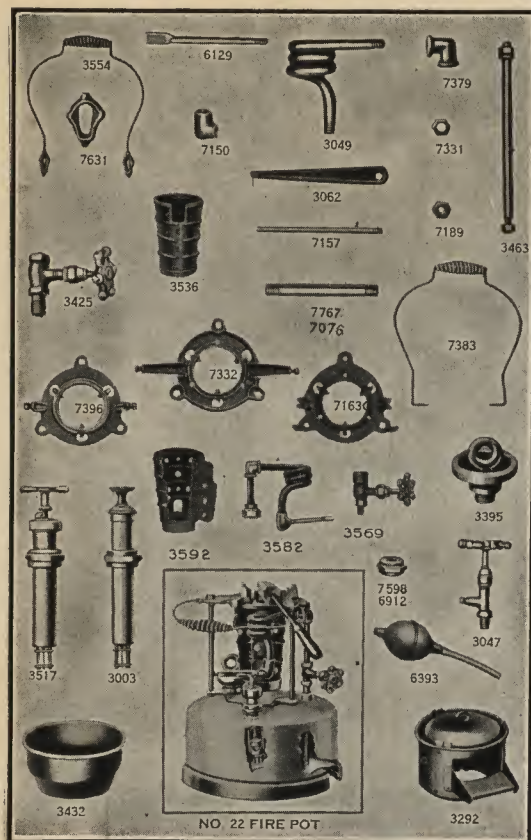
No. 12A is exactly like No. 22A but fitted with air valve and bulb.

No.	22A	12A
Each.....	\$25.00	24.80
Capacity.....	1 Gal.	1 Gal.
Ship. Wt.....lbs.	12 $\frac{3}{4}$	12 $\frac{1}{2}$





## Repair Parts for C &amp; L Coil Fire Pots



## For Nos. 12A, 22A, 12, 22, 23 and 24 Fire Pots

No.	Description	Each
6129	Burner Jet for Gasoline.....	\$.40
7150	Brass Ell.....	.40
7379	Connecting Pipe Ell.....	.50
3049	Coil.....	1.70
3582	Coil Unit for Nos. 12A and 22A.....	3.85
3458	Coil for Nos. 33, 34, 35 Fire Pot.....	2.60
3536	Coil Cup for Nos. 12 and 22 (3 Pieces).....	1.00
3592	Coil Cup for Nos. 12A and 22A (Hinged Door).....	1.00
3062	Jet Cleaner.....	.30
7396	Top Plate with Lugs Used with 3554 Handle.....	1.50
7163C	Top Plate Used with 7383 Handle (No Lugs).....	1.50
7332	Top Plate with Lugs Used with 3433 Handle.....	1.75
3210	Top Plate and Handle for No. 35 Fire Pot.....	4.00
3554	Handle with Ears Used with 7396 Top Plate.....	1.00
7383	Handle Used with 7163C Top Plate (Bent Ends).....	.40
3433	Handle with Ears Used with 7332 Top Plate.....	1.00
7631	Handle Ear.....	.30
7076	Connecting Pipe for Nos. 12 and 22.....	.40
7767	Connecting Pipe for Nos. 12A and 22A.....	.40
7157	Dip Tube.....	.35
3463	Upright with Nuts $\frac{5}{16} \times 6\frac{3}{4}$ Inches.....	.30
7331	Nut for Upright, Steel Top.....	.08
7189	Nut for Upright, Brass Bottom.....	.08
3425	Valve, $\frac{1}{8} \times \frac{1}{4}$ -Inch I. P. S. Threads for Nos. 12 and 22.....	2.00
3569	Valve for Nos. 12A and 22A.....	2.00
3395	Filler Plug.....	1.50
3517	Pump Complete, Large (Inside Threads $1\frac{1}{4} \times 16$ in.).....	5.00
3003	Pump Complete, Small (Inside Threads $1 \times 16$ in.).....	3.70
3047	Air Valve.....	1.50
7598	Reducer, Large (Inside Threads $1\frac{1}{4}$ In. $\times 16$ ).....	.60
6912	Reducer, Small (Inside Threads $1$ In. $\times 16$ ).....	.60
6393	Rubber Bulb.....	1.00
3432	Plumber's Shield $6\frac{1}{2}$ -In. Diam. at Top.....	1.50
3277	Plumber's Shield $9\frac{1}{4}$ -In. Diam. at Top for No. 24.....	6.00
3292	Hood with Cover for No. 23.....	7.20
3332	Hood Cover.....	1.00
3417B	Steel Tank, 1 Gallon (No Pump or Filler Plug).....	12.00
3506B	Steel Tank, $\frac{3}{4}$ Gallon (No Pump or Filler Plug).....	10.00

## No. 208 C &amp; L Double Needle Torches

1-Quart Capacity  
For Gasoline

The improved double needle burner generates from 200 to 300 degrees more heat. Both needles are blunt, which makes it impossible to ruin the burner by enlarging the orifice. The upper needle has a wire tip that cleans the orifice; lower needle regulates the flame. Ideal for cold and windy weather.

Shipping weight,  $5\frac{1}{4}$  pounds.

Price, No. 208.....each \$19.00



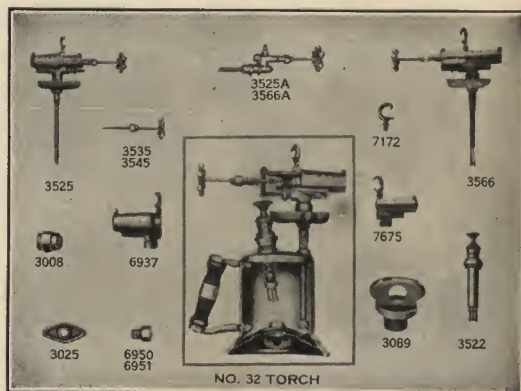
## C &amp; L Single Needle Torches

No. 32A, 1-Quart Capacity  
No. 38, 1-Pint Capacity  
For Gasoline

Performs perfectly either indoors or outdoors under severest weather conditions. Powerful burner of improved construction is fitted with wind shield and has self-cleaning non-enlargeable gas orifice. A powerful blue blast, which can be regulated to a small concentrated flame, can always be secured.

By changing the burner jet, kerosene may be burned successfully.

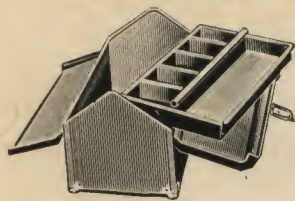
No.....	32A	38
Each.....	\$18.00	17.00
Capacity.....qts.	1	$\frac{1}{2}$
Ship. Wt.....lbs.	$5\frac{1}{4}$	4

Repair Parts for C & L Torches  
Nos. 32, 38 and 52

Description	No. 32 Torch	No. 38 Torch	No. 52 Torch
	No. Each	No. Each	No. Each
*Burner Complete.....	3525 \$9.00	3566 \$8.60	3601 \$8.60
Back Burner and Needle.....	3525A 4.15	3566A 4.15	3600A 4.15
*Burner Body.....	6937 3.25	7675 3.00	6939 3.00
*Back Burner Body and Needle Assembled.....	3525B 7.50	3566B 7.25	3601B 7.25
†Needle with Cleaner Tip and Stuffing Box.....	3535 1.50		
*Priming Cup.....	3025 .50	3025 .50	6821 .50
Jet Block.....	6950 .40		
Stuffing Box.....	3008 .40	3008 .40	3008 .40
Burner Hook.....	7172 .25	7172 .25	7172 .25
Filler Plug.....	3089 .90	3089 .90	3089 .90
**Pump (Inside Threads 1" — 16).....	3522 3.70	3522 3.70	3075 3.70

\*No. 32 Burner has  $\frac{1}{4}$ -inch I.P.S. feed tube, and will fit any quart torch. No. 38 and 52 burners also have  $\frac{1}{4}$ -inch threads on feed tube. †New style needle with cleaner tip will not fit burners designed for ordinary needles.  
\*\*Will be shipped unless otherwise specified.



**Kennedy All Steel Mechanics' Kits**

This kit is finished in durable Kennedy brown enamel. It has double-seamed ends, rolled edges, and electrically welded connections.

Brassed corners, side catches, strong multiple change lock, leather covered handle with steel core. The tray is divided into small compartments.

The kit is light enough to carry but will not change shape when heavily loaded. Waterproof and durable.  
Packed 6 in a crate.

No.	Each	Size Inches	Shipping Wt., Lbs.	No.	Each	Size Inches	Shipping Wt., Lbs.
114	\$5.25	14x7x9	55	120	\$6.00	20x11x13	100
116	5.50	16x9x11	75	122	6.25	22x11x13	110
118	5.75	18x10x13	90	...	...	...	...

Furnished without tray, 50 cents less.

**Kennedy All Steel Tool Kits**

Without tray. Ideal for plasterers, decorators, etc.

Made of prepared steel and reinforced at all points of strain to withstand hard usage.

Fitted with Corbin lock and side catches and leather handle which is reinforced with steel cores.

Finished in a durable brown baked enamel.

No.	Size Inches	No. to Crate	Wt., Lbs. per Crate	Price Each
214	14x 7x 9	6	45	\$4.75
216	16x 9x11	6	60	5.00
218	18x10x13	6	75	5.25
220	20x11x13	6	85	5.50
222	22x11x13	6	90	5.75

**Nye Steel Tool Chests**

Made of  $\frac{1}{8}$ -inch steel sheet entirely reinforced with  $2\frac{1}{2}$ -inch oak cleats.

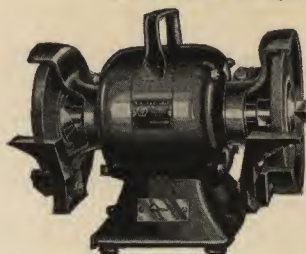
Heavy steel skids make the chest slide easily over rough surfaces and prevent wear. The lid is held down at the front corners with  $\frac{1}{2}$ -inch bolts which screw into malleable iron corners having a  $\frac{3}{4}$ -inch thread surface.

Equipped with six heavy handles, chained lock and keys. Chest is enameled in olive green with cleats in natural color. Furnished with one sliding drawer.

No.	Depth Inches	Width Inches	Length Inches	Price Each
1	11	12	24	\$26.00
2	14	15	30	35.50
3	16	17	36	39.00
4	19	20	42	45.50

**Black & Decker 6-Inch Ball-Bearing Bench Grinders**

110 Volts, 50-60 Cycles, Single Phase A.C.



Designed for general purpose grinding and tool sharpening. Wheel guards are adjustable, making it possible to grind at any position on the circumference of the wheels.

Fitted with rubber feet and lifting handle. Practically free from vibration. No load speed, 3600 r.p.m.

Size of wheels, 6-inch diameter,  $\frac{1}{2}$ -inch face and  $\frac{1}{2}$ -inch hole. Weight, 36 pounds. Equipped with switch in base, electric cable with attachment plug, 2 adjustable tool rests and wheel guards.

Price .....each \$35.00

**Black & Decker Hole Saws**

For Use with  $\frac{1}{2}$ ,  $\frac{5}{8}$  and  $\frac{3}{4}$ -Inch Black & Decker Drills

The Black & Decker Hole Saw increases the range of a  $\frac{1}{2}$ -inch electric drill to  $3\frac{1}{2}$  inches, and is used for cutting clean round holes in metal, wood, or any material that can be cut with a hack saw.

It is made of finest quality tungsten steel, carefully hardened. The mandrel automatically holds a  $\frac{1}{4}$ -inch twist drill which drills the pilot hole to serve as a guide for the saw. Holes up to  $\frac{7}{8}$  inch deep can be cut.

**Hole Saws Only (without Mandrels)**

No.	Each	Saw Size Inches	Pipe Tap Inches	Conduit Inches	Use with Mandrel No.
00906	\$.60	$\frac{3}{4}$	...	$\frac{3}{8}$	00903
00908	.60	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{1}{2}$	00903
00910	.60	1	...	...	00903
00912	.60	$1\frac{1}{8}$	1	$\frac{3}{4}$	00903
00911	.60	$1\frac{1}{4}$	...	...	00904
00913	.60	$1\frac{3}{8}$	...	1	00904
00914	.60	$1\frac{1}{2}$	$1\frac{1}{4}$	...	00904
00915	.90	$1\frac{5}{8}$	...	...	00904
00916	.90	$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	00904
00917	.90	$1\frac{7}{8}$	...	...	00904
00918	.90	2	...	$1\frac{1}{2}$	00904
00919	.90	$2\frac{1}{16}$	...	...	00904
00920	.90	$2\frac{1}{8}$	...	...	00904
00922	1.25	$2\frac{1}{4}$	2	...	00904
00921	1.25	$2\frac{3}{8}$	...	...	00904
00923	1.25	$2\frac{1}{2}$	...	2	00904
00924	1.25	$2\frac{5}{8}$	...	...	00904
00925	1.25	$2\frac{3}{4}$	...	...	00904
00927	1.25	$2\frac{7}{8}$	...	...	00904
00926	1.25	3	...	$2\frac{1}{2}$	00904
00930	1.25	$3\frac{1}{8}$	...	...	00904
00929	1.25	$3\frac{1}{4}$	...	...	00904
00928	1.25	$3\frac{1}{2}$	...	...	00904

**Mandrels**

No.	Description	Each
00903	With Pilot Drill (for $\frac{3}{4}$ to $1\frac{1}{8}$ -In. Saws).....	\$1.50
00904	With Pilot Drill (for $1\frac{1}{4}$ to $3\frac{1}{2}$ -In. Saws)....	1.50

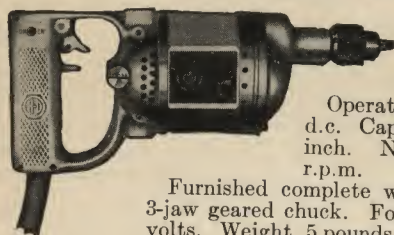
**Special Assortments**

00902	Plumbers' and Steamfitters' Set, with One Each Saw for $\frac{3}{4}$ , 1, $1\frac{1}{4}$ , $1\frac{1}{2}$ and 2-Inch Pipe Taps, and Nos. 00903 and 00904 Mandrels...	\$6.50
00900	Electricians' Set, with $\frac{3}{4}$ , $\frac{7}{8}$ , $1\frac{1}{8}$ , $1\frac{3}{8}$ , $1\frac{1}{4}$ , 2, $2\frac{1}{2}$ and 3-Inch Saws for Cutting Holes for Conduit, and Nos. 00903 and 00904 Mandrels	9.50
00901	Automotive Set, Consisting of $\frac{3}{4}$ -Inch Saw for Cigar Lighters, 2-Inch Saw for Gauges and Ammeters, $2\frac{1}{16}$ -Inch Saw for Dash Type Motometer, $2\frac{5}{8}$ -Inch Saw for Clocks, and $3\frac{1}{2}$ -Inch Saw for Speedometers, Together with Nos. 00903 and 00904 Mandrels.....	7.50



### Black & Decker 1/4-Inch Light-Duty Portable Electric Drills

*With the Pistol Grip and Trigger Switch*



A general purpose drill for light work on intermittent service.

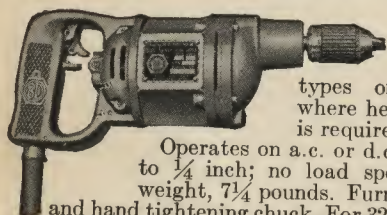
Operates on either a.c. or d.c. Capacity in steel, 0 to 1/4 inch. No load speed, 2000 r.p.m.

Furnished complete with cable, plug and 3-jaw geared chuck. For 32, 110, 220 or 250 volts. Weight, 5 pounds.

Complete, All Voltages.....each \$25.00  
No. 10040 Bench Drill Stand for This Drill.....each 12.00  
Extra for Grinding Outfit.....each 3.25

### Black & Decker 1/4-Inch Heavy Duty Portable Electric Drills

*With the Pistol Grip and Trigger Switch*



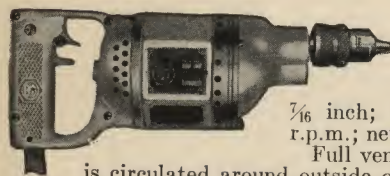
Designed for continuous production work and for all types of maintenance work where heavy duty performance is required.

Operates on a.c. or d.c. Capacity in steel, 0 to 1/4 inch; no load speed, 2000 r.p.m.; net weight, 7 1/4 pounds. Furnished with cable, plug and hand tightening chuck. For 32, 110, 220 or 250 volts. Grinding outfit, \$4.00 extra.

All Voltages.....each \$38.00  
No. 10 040 Bench Stand for This Drill.....each 12.00

### Black & Decker 5/16-Inch Ball Bearing Electric Drills

*With the Pistol Grip and Trigger Switch*



Operates on a.c. or d.c. Capacity in steel, 0 to 5/16 inch; in wood, 0 to 1/2 inch; no load speed, 1400 r.p.m.; net weight, 7 1/2 pounds.

Full ventilation. Cooling air is circulated around outside of motor field as well as through gap due to hexagonal body design. With Ettco keyless 3-jaw chuck, cable and plug.

For 32, 110, 220 or 250 Volts.....each \$48.00  
No. 10040 Bench Drill Stand.....each 12.00  
Extra for Speed of 1800 R.P.M.....each 2.50

### Black & Decker 1/2-Inch Ball Bearing Portable Electric Drills

*With the Pistol Grip and Trigger Switch*



Operates on a.c. or d.c. Capacity in steel up to 1/2 inch. No load speed, 400 r.p.m. Weight, 12 1/2 pounds.

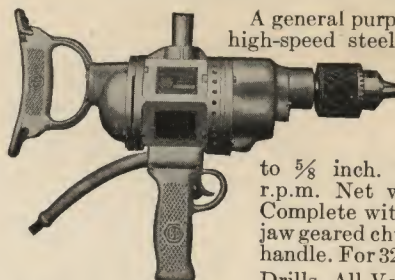
Complete with cable, attachment plug and 3-jaw geared chuck. Chuck key holder in handle.

Bench stand, \$18.90 extra.  
For 32, 110, 220 and 250 volts.

For all Voltages.....each \$45.00

### Black & Decker 5/8-Inch Portable Electric Drills

*With the Pistol Grip and Trigger Switch*



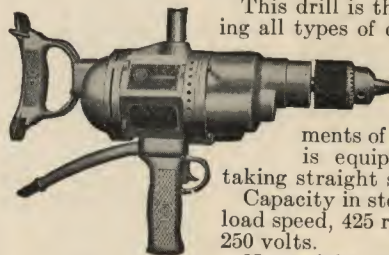
A general purpose tool for carbon or high-speed steel bits. Designed for cylinder honing with spring expanded hones. Operates on a.c. or d.c. Capacity in steel, 5/32 to 5/8 inch. No load speed, 500 r.p.m. Net weight, 17 1/2 pounds. Complete with cable, plug and 3-jaw geared chuck. Detachable side handle. For 32, 110, 220 or 250 volts.

Drills, All Voltages.....each \$68.00  
No. 3 Bench Drill Stand for This Drill.....each 28.00  
No. 3 Post Drill Stand for This Drill.....each 32.00

### Black & Decker 3/4-Inch Ball-Bearing Electric Drills

*Universal Motor—Operates on A.C. or D.C.*

*With the Pistol Grip and Trigger Switch*



This drill is the ideal tool for driving all types of cylinder grinders and cylinder hones.

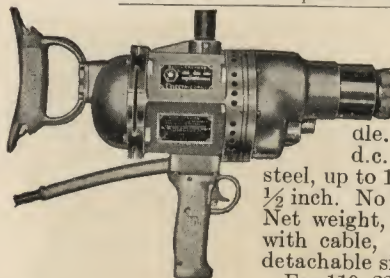
Designed and built to withstand the heavy requirements of this type of work and is equipped with chuck for taking straight shanks up to 3/4 inch. Capacity in steel, 3/8 to 3/4 inch. No load speed, 425 r.p.m. For 110, 220 or 250 volts.

Net weight, 23 1/2 pounds.

3/4-Inch Drills, All Voltages.....each \$78.00

### Black & Decker 1-Inch Ball Bearing Portable Electric Drills

*With the Pistol Grip and Trigger Switch*



For taper shank drill bits and reamers. No. 3 Morse taper socket is secured in drill spindle. Operates on a.c. or d.c. Drilling capacity in steel, up to 1 inch; reaming, 1 1/8 to 1 1/2 inch. No load speed, 350 r.p.m. Net weight, 26 pounds. Complete with cable, attachment plug and detachable side handle.

For 110, 220 or 250 volts.

For All Voltages.....each \$98.00  
Post Drill Stand.....each 32.00  
Bench Stand.....each 28.00

### No. 5 Black & Decker Plumbers' and Electricians' Tool Kits

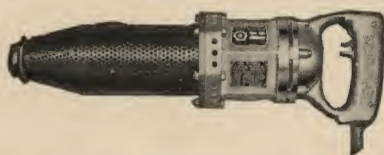
Tools are packed in a strong metal kit box and consist of:

Black & Decker 1/2-inch ball bearing electric drill, hole saws in pipe tap sizes and outside pipe or conduit sizes from 3/8 to 2 1/4 inch; wood augers 1 1/4, 1 1/2 and 1 3/4-inch; twist drill bits 1/4, 3/8, 1/2, 5/8 and 1-inch.



No. 5, Complete.....each \$70.00



**Black & Decker Portable Electric Hammers***With the Pistol Grip and Trigger Switch*

These hammers can be furnished with either 110, 220 or 250 volts. Universal motors operating on either a.c. or d.c.

These hammers are equipped with auxiliary perforated barrels which cools the operator's hands at all times.

**No. 2**

This portable electric hammer is light in weight and is particularly suitable for drilling in concrete or brick for electrical work, sign and awning hanging and theater seat installation. Strikes 3300 blows per minute and has a capacity for drilling up to  $\frac{3}{8}$  inch in concrete or brick. Length over all, 16 $\frac{1}{4}$  inches. Packed in fibre carrying case with one No. 0 chuck and turning wrench, one  $\frac{5}{8}$ -inch star drill and one drift key. Net weight each, 10 pounds.

No. 2, All Voltages.....each \$145.00

**No. 4**

Ideal for driving any type of tool where hammer action is desired such as star drills, steel chisels, wood working chisels, etc. Strikes 2900 blows per minute. Capacity in concrete or brick, up to 1 $\frac{1}{8}$  inch. Length over all, 19 inches. Packed in fibre carrying case with one each Nos. 1 and 2 chucks and turning wrenches, one 1-inch star drill and one drift key. Net weight each, 16 $\frac{1}{2}$  pounds.

No. 4, All Voltages.....each \$185.00

**No. 6**

This portable electric hammer has a larger capacity than the Nos. 2 and 4. Strikes 2900 blows per minute. Length over all, 20 $\frac{3}{4}$  inches. Packed in fibre carrying case with one each Nos. 2 and 3 chucks and turning wrenches and one 1 $\frac{1}{2}$ -inch star drill and one drift key. Net weight each, 23 pounds.

No. 6, All Voltages.....each \$245.00

**No. 1 Black & Decker Electric Tool Chests**

This tool chest is for use by mechanics, students, experimenters, or anyone who is mechanically inclined.

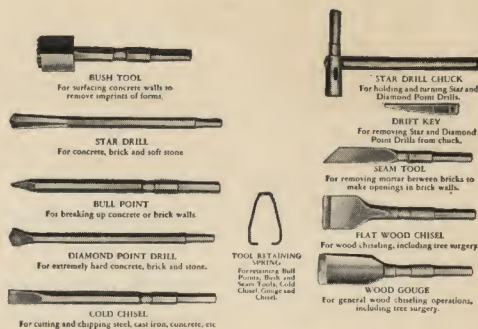
With the Black & Decker  $\frac{1}{4}$ -inch light duty electric drill holes may be drilled up to  $\frac{1}{4}$  inch in wood or metal and when equipped with the 3-inch grinding wheel and fastened in the bench drill stand it may be used for light grinding such as sharpening knives, light tools and other types of light bench grinding. This drill and the 4-inch wire wheel brush may be used for removing paint and rust. The 4-inch wire wheel brush may be used for removing paint and rust. The 4-inch rag buffing wheel is ideal for most kinds of polishing work, such as nickel on automobiles, silverware, etc. The 4-inch sanding disc and the  $\frac{1}{4}$ -inch drill, when used in the bench drill stand, may be used in the workshop.

The chest is metal, finished in green.

The contents are as follows:

Black & Decker  $\frac{1}{4}$ -Inch Light Duty Electric Drill  
4-Inch Wire Wheel Brush, with Arbor  
4-Inch Rag Buffing Wheel  
4-Inch Sanding Disc, with Arbor  
3-Inch Grinding Wheel, with Arbor.

Price, Complete No. 1.....each \$40.00

**Accessories for Nos. 2, 4 and 6 Black & Decker Electric Hammer Tools**

No.	Description	Price Each
97167	$\frac{1}{4}$ x5-Inch Star Drill Point.....	\$1.00
97168	$\frac{3}{16}$ x5-Inch Star Drill Point.....	1.00
97160	$\frac{3}{8}$ x5-Inch Star Drill Point.....	1.00
97169	$\frac{1}{2}$ x5-Inch Star Drill Point.....	1.15
97161	$\frac{1}{2}$ x9-Inch Star Drill Point.....	1.15
97170	$\frac{3}{16}$ x9-Inch Star Drill Point.....	1.15
97162	$\frac{3}{8}$ x9-Inch Star Drill Point.....	1.30
97171	$\frac{1}{2}$ x9-Inch Star Drill Point.....	1.30
97163	$\frac{3}{4}$ x9-Inch Star Drill Point.....	1.30
97172	$\frac{1}{2}$ x9-Inch Star Drill Point.....	1.50
97097	$\frac{1}{8}$ x9-Inch Star Drill Point.....	1.50
97173	$\frac{1}{2}$ x9-Inch Star Drill Point.....	1.50
97096	1x9-Inch Star Drill Point.....	1.50
10751	1 $\frac{1}{2}$ x12-Inch Star Drill Point.....	2.25
10752	1 $\frac{1}{4}$ x12-Inch Star Drill Point.....	2.50
10749	1 $\frac{3}{8}$ x12-Inch Star Drill Point.....	2.75
10750	1 $\frac{1}{2}$ x12-Inch Star Drill Point.....	3.00
10753	1 $\frac{3}{4}$ x12-Inch Star Drill Point.....	3.50
10754	2x12-Inch Star Drill Point.....	4.00
97095	Steel Chipping Chisel Dressed to $\frac{3}{4}$ x9-Inch...	1.75
97267	Chisel Blanks, $\frac{3}{4}$ x9 Inches.....	1.25
99036	Bull Point, $\frac{3}{4}$ -Inch.....	2.25
11363	$\frac{1}{4}$ x5-Inch Diamond Point.....	1.00
11364	$\frac{5}{16}$ x5-Inch Diamond Point.....	1.00
11365	$\frac{3}{8}$ x5-Inch Diamond Point.....	1.00
11366	$\frac{1}{2}$ x5-Inch Diamond Point.....	1.15
11367	$\frac{1}{2}$ x9-Inch Diamond Point.....	1.15
11368	$\frac{3}{16}$ x9-Inch Diamond Point.....	1.15
11369	$\frac{5}{8}$ x9-Inch Diamond Point.....	1.30
11370	$\frac{1}{2}$ x9-Inch Diamond Point.....	1.30
11371	$\frac{3}{4}$ x9-Inch Diamond Point.....	1.30
11372	$\frac{1}{2}$ x9-Inch Diamond Point.....	1.50
11373	$\frac{7}{8}$ x9-Inch Diamond Point.....	1.50
11374	$\frac{1}{2}$ x9-Inch Diamond Point.....	1.50
11375	1x9-Inch Diamond Point.....	1.50
11376	1 $\frac{1}{8}$ x12-Inch Diamond Point.....	2.25
11377	1 $\frac{1}{4}$ x12-Inch Diamond Point.....	2.50
11378	1 $\frac{3}{8}$ x12-Inch Diamond Point.....	2.75
11379	1 $\frac{1}{2}$ x12-Inch Diamond Point.....	3.00
11380	1 $\frac{3}{4}$ x12-Inch Diamond Point.....	3.50
11381	2x12-Inch Diamond Point.....	4.00
10651	No. 0 Star Drill Chuck (Takes Points from $\frac{1}{4}$ to $\frac{5}{8}$ -Inch Inclusive) with Turning Handle...	3.50
99239	No. 1 Star Drill Chuck (Takes Points from $\frac{1}{4}$ to $\frac{3}{4}$ Inch Inclusive) with Turning Handle...	3.50
99243	No. 2 Star Drill Chuck (Takes Points from $\frac{1}{2}$ to 1 $\frac{1}{4}$ -In. Inclusive) with Turning Handle...	4.50
99420	No. 3 Star Drill Chuck (Takes Points from 1 $\frac{3}{8}$ Inches Up) with Turning Handle.....	5.50
97155	Drift Key.....	.50
10909	No. 2 Tool Retaining Spring.....	.25
10337	No. 4 Tool Retaining Spring.....	.25
10336	No. 6 Tool Retaining Spring.....	.25

Extra length star drills and chisels, 12, 16, 20 and 24 inches, supplied at extra charge.

Prices of tools other than illustrated above, and of special tools upon request.



## Useful Information

## Wrought Iron and Steel Pipe

## Safe Working Pressures

Numerous factory tests to determine the actual bursting pressure of wrought pipe have proved Barlow's formula to be correct. This formula follows:

$$BP \text{ equals } \frac{2TSTS}{OD}$$

in which BP equals bursting pressure in pounds per square inch.

T equals thickness of the wall in inches.

OD equals outside diameter of the pipe in inches.

TS equals tensile strength of material per square inch.

The value of TS was determined from actual tests to be 40000 pounds per square inch for butt welded steel pipe and 50000 pounds for lap welded steel pipe.

The table following is based on the formula given above. The working pressures given are based on a factor of safety of eight.

## Theoretical Bursting and Working Pressures

## Pounds per Square Inch

Size In.	Standard		Extra Strong		Double Extra Strong	
	Bursting Pressure Barlow's Formula	Working Pressure Factor 8	Bursting Pressure Barlow's Formula	Working Pressure Factor 8	Bursting Pressure Barlow's Formula	Working Pressure Factor 8
1/8	13432	1679	18760	2345	.....	.....
1/4	13032	1629	17624	2203	.....	.....
3/8	10784	1348	14928	1866	.....	.....
1/2	10384	1298	14000	1750	28000	3500
3/4	8608	1076	11728	1466	23464	2933
1	8088	1011	10888	1361	21776	2722
1 1/4	6744	843	9200	1150	18408	2301
1 1/2	6104	763	8416	1052	16840	2105
2	5184	648	7336	917	14680	1835
2 1/2	5648	706	7680	960	15360	1920
3	4936	617	6856	857	13714	1714
3 1/2	5610	701	7950	994	15900	1987
4	5266	658	7480	935	14970	1871
4 1/2	4940	618	7100	887	14200	1775
5	4630	579	6740	842	13480	1685
6	4220	528	6520	815	13040	1630
7	3940	493	6550	819	11470	1434
8	3730	466	5780	722	10140	1267
9	3550	444	5190	649	.....	.....
10	3390	424	4650	581	.....	.....
12	2940	368	3920	490	.....	.....

## Large O.D.

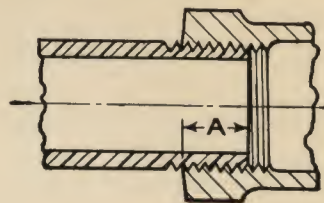
Size In.	3/8 In. Thick		1/2 In. Thick	
	Bursting Pressure Barlow's Formula	Working Pressure Factor 8	Bursting Pressure Barlow's Formula	Working Pressure Factor 8
14	2680	335	3570	446
15	2500	313	3333	417
16	2340	293	3120	390
18	2080	260	2770	346
20	1870	234	2500	313
22	1700	213	2270	284
24	1560	195	2080	260

In the above table, butt welded pipe was figured on sizes 3-inch and smaller and lap welded pipe sizes 3 1/2-inch and larger.

## Useful Information

## Length of Thread on Pipe

That Is Screwed into Valves or Fittings to Make a Tight Joint



Size Inches	Dimension A Inches	Size Inches	Dimension A Inches
1/8	1/4	3 1/2	1 1/8
1/4	3/8	4	1 1/8
3/8	3/8	4 1/2	1 1/8
1/2	1/2	5	1 3/8
3/4	1/2	6	1 1/4
1	9/16	7	1 1/4
1 1/4	5/8	8	1 5/8
1 1/2	5/8	9	1 3/8
2	11/16	10	1 1/2
2 1/2	15/16	12	1 5/8
3	1	..	...

Dimensions given do not allow for variation in tapping or threading.

## Wrought Iron and Steel Pipe

## Pipe Mill Tests

There are no established standards for mill tests on wrought pipe.

The various manufacturers have their own schedule of tests, which average as follows:

## Standard Butt Welded Wrought Pipe

The tests on 1/8 to 3-inch, inclusive, range from 700 to 1000 pounds, according to size.

## Standard Lap Welded Wrought Pipe

The tests on 1 1/2 to 12-inch, inclusive, range from 500 to 1000 pounds, according to size.

## Extra Strong Butt Welded Wrought Pipe

The tests on 1/8 to 3-inch, inclusive, range from 700 to 1500 pounds, according to size.

## Extra Strong Lap Welded Wrought Pipe

The tests on 1 1/2 to 12-inch, inclusive, range from 1100 to 2500 pounds, according to size.

## Double Extra Strong Butt Welded Wrought Pipe

The tests on 3/8 to 2 1/2-inch, inclusive, range from 700 to 2200 pounds, according to size.

## Double Extra Strong Lap Welded Wrought Pipe

The tests on 1 1/2 to 8-inch, inclusive, range from 2000 to 3000 pounds, according to size.

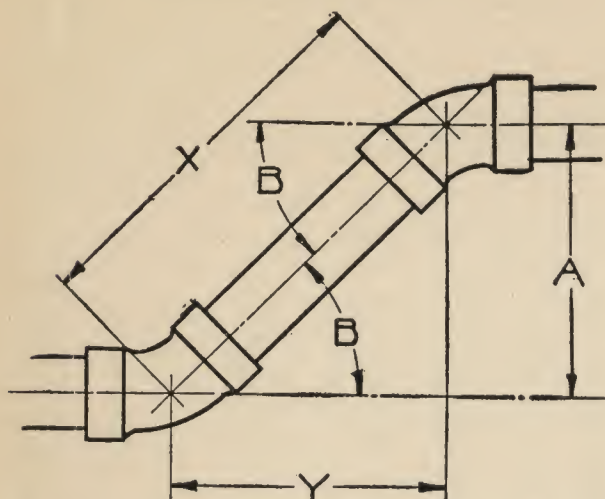
The above tests are made by the mill simply to detect any defects in the weld or other portions of the pipe and are not made as a basis from which to figure safe working pressures.







### Formula for Offset Connections Used in General Practice



**X (Center to Center)—A (Offset) Multiplied by Constant**  
**Y (Center to Center)—A (Offset) Multiplied by Constant**

B-Angle	CONSTANT		B-Angle	CONSTANT	
	For X	For Y		For X	For Y
60 Degrees	1.15	.58	22½ Degrees	2.61	2.41
45 "	1.41	1.00	11¼ "	5.12	5.02
30 "	2.00	1.73	5½ "	10.20	10.15

#### Air Required for Ventilation

An adult must have each hour for respiration and transpiration 215 feet or 215x.077=16.55 pounds, and generates 290 B.T.U., of which 99 units are in form of vapor and 191 units radiate to surrounding objects.

Good practice requires not less than 1800 cubic feet of air per hour to cover all requirements for each person.

Each cubic foot gas burned requires 8.5 cubic feet air.

Each pound oil burned requires 150 cubic feet air. Each pound candles burned requires 160 cubic feet air. B.T.U. generated by adult per hour, 191. B.T.U. generated by burning 1 cubic foot gas, 600. B.T.U. generated by burning 1 pound oil or candles, 15000 to 18000.

Average gas burner consumes approximately 4 cubic feet gas per hour, which equals 2400 per hour. Each flame from oil lamp, 430 to 515 B.T.U. per hour. Each candle 454 to 545 B.T.U. per hour. B.T.U.—British Thermal Units.

#### Relative Value of Non-conductors

Non-conductors	Value	Non-conductors	Value
Wool Felts	1.000	Loam, Dry and Open	.550
Mineral Wool, No. 2	.832	Slacked Lime	.480
" " with Tar	.715	Gas-house Carbon	.470
Sawdust	.680	Asbestos	.363
Mineral Wool, No. 1	.676	Coal Ashes	.345
Charcoal	.632	Coke, in Lumps	.277
Pine Wood, Across Fibre.	.553	Air Space, Undivided	.186

#### Boiling Points of Various Fluids

	Degrees		Degrees
Water, Atmospheric Pressure	212	Turpentine	315
Alcohol	173	Sulphur	570
Sulphuric Acid	240	Linseed Oil	597
Refined Petroleum	316		....

#### Table of Mains and Branches

Main	Supply	
1 -in. Will Supply 2	2	¾-in.
1¼ " " " 2	2	1 ¼ "
1½ " " " 2	2	1 ½ "
2 " " " 2	2	1 ¾ "
2½ " " " 2 1 ½ -in. and 1 1 ¼ -in.	or 12	-in. and 1 1 ½ "
3 " " " 12 ½ "	" 12	" " 1 1 ½ "
3½ " " " 22 ½ "	or 13	" and 12
4 " " " 13 ½ "	and 12 ½ "	or 23
4½ " " " 13 ½ "	" 13	" " 14
5 " " " 14	" 13	" " 14 ½ "
5½ " " " 24	" 13	" " 13
6 " " " 16	" 14	" " 44
6½ " " " 26	" 15	" " 54

### Useful Information Miscellaneous

To find the diameter of a circle multiply the circumference by .31831.

To find the circumference of a circle multiply the diameter by 3.1416.

To find the area of a circle multiply the square of the diameter by .7854.

To find the surface of a ball multiply the square of the diameter by 3.1416.

To find the side of an equal square multiply the diameter by .8862.

To find the cubic inches in a ball multiply the cube of the diameter by .5236.

To double the diameter of a pipe increases its capacity four times.

Double riveting is from 16 to 20 per cent stronger than single.

One cubic foot of anthracite coal weighs about 53 pounds.

One cubic foot of bituminous coal weighs from 47 to 50 pounds.

One ton of coal is equivalent to two cords of wood for steam purposes.

A gallon of water (U. S. standard) weighs 8½ pounds and contains 231 cubic inches.

A cubic foot of water contains 7½ gallons, 1728 cubic inches, and weighs 62½ pounds.

To sharpen dull files lay them in dilute sulphuric acid until they are eaten deep enough.

A horse power is equivalent to raising 33,000 pounds 1 foot per minute or 550 pounds 1 foot per second.

To find the pressure in pounds per square inch of a column of water multiply the height of the column in feet by .434.

Steam rising from water at its boiling point (212 degrees) has a pressure equal to the atmosphere (14.7 pounds to the square inch).

To evaporate 1 cubic foot of water requires the consumption of 7½ pounds of ordinary coal or about 1 pound of coal to 1 gallon of water.

One-sixth of tensile strength of plate multiplied by thickness of plate and divided by one-half the diameter of boiler gives safe working pressure for tubular boilers. For square marine boilers add 20 per cent for drilled holes.

No plate or bars of either steel or iron should be worked at a black or blue heat (say about 500 degrees); the material will stand far more strain either red hot or cold, while at an intermediate point great risk will be run, and possible strains produced which result in rupture later on.

A miner's inch of water is approximately equal to a supply of 12 U. S. gallons per minute.

The mean pressure of the atmosphere is estimated at 14.7 pounds per square inch, so that with a perfect vacuum it will sustain a column of water 33.9 feet high.

A cubic inch of water evaporated under atmospheric pressure is approximately converted into 1 cubic foot of steam.

The horse power of boilers, as per standard adopted by the Am. S. M. E. is 30 pounds water evaporated per hour at a pressure of 70 pounds per square inch and from a temperature of 100 degrees Fahrenheit.

Well designed boilers, under successful operation, will evaporate from 7 to 10 pounds of water per pound of first-class coal.

Each square foot of heating surface is considered sufficient to evaporate 2 pounds of water; therefore, for an engine using 30 pounds water per horse power per hour, each horse power of the engine requires 15 square feet heating surface in the boiler.

On one square foot of fire grate can be burned on an average from 10 to 12 pounds hard coal, or 18 to 20 pounds soft coal, per hour, with natural draft.

Two and one-quarter pounds of dry wood is equal to 1 pound of average quality soft coal.

There is a saving of about 1 per cent in fuel burned for every 11 degrees feed water that is warmed. With sufficient exhaust steam available, if cold water at 70 degrees is raised to 210 degrees Fahrenheit, the saving of fuel will approximate 12 per cent.

Designers of steam piping figure on a steam travel of about a mile and a half per minute. Very often it is much more than this.

The friction of water in pipes is as the square of velocity.

The capacity of pipes is as the square of their diameters; thus doubling the diameter of a pipe increases its capacity four times.

The height of a column of fresh water, equal to a pressure of one pound per square inch, is 2.31 feet. (In usual computation this is taken at 2 feet, thus allowing for ordinary friction.)

To find the capacity of a cylinder, in gallons: Multiply the area in inches by the length of stroke in inches, will give the total amount of cubic inches; divide this amount by 231 (the cubical contents of a U. S. gallon in inches) and the product is the capacity in gallons.



